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```
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      36550 AG/MAC
      707057 0.1-7/MAC
L1      12609 AG 0.1-7/MAC
          (AG/MAC (P) 0.1-7/MAC)

=> s in 2-10/mac
      18144 IN/MAC
      518641 2-10/MAC
L2      6746 IN 2-10/MAC
          (IN/MAC (P) 2-10/MAC)

=> s sb 64-92/mac
      18184 SB/MAC
      369211 64-92/MAC
L3      2463 SB 64-92/MAC
          (SB/MAC (P) 64-92/MAC)

=> s te 5-26/mac
      10775 TE/MAC
      479334 5-26/MAC
L4      1917 TE 5-26/MAC
          (TE/MAC (P) 5-26/MAC)

=> s ge 0.3-3/mac
      14974 GE/MAC
      607629 0.3-3/MAC
L5      3824 GE 0.3-3/MAC
          (GE/MAC (P) 0.3-3/MAC)

=> s l1 and l2 and l3 and l4 and l5
L6      70 L1 AND L2 AND L3 AND L4 AND L5
```

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L7 51 L6

=> d all 1-51

L7 ANSWER 1 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:546192 CAPLUS
DN 143:86769
ED Entered STN: 24 Jun 2005
TI Double sided record-once read-many optical disks
IN Minakami, Satoru
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
 ICS B41M005-26; G11B007-007
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2005166171 | A2 | 20050623 | JP 2003-404065 | 20031203 |
| PRAI | JP 2003-404065 | | 20031203 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2005166171 | ICM | G11B007-24 |
| | ICS | B41M005-26; G11B007-007 |
| | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-007 [ICS,7] |
| | FTERM | 2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA22; 2H111/EA23; 2H111/EA25; 2H111/EA31; 2H111/FA02; 2H111/FA12; 2H111/FA14; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB17; 2H111/FB21; 2H111/FB42; 5D029/JA01; 5D029/JA04; 5D029/JB10; 5D029/JB14; 5D029/JB18; 5D029/JB42; 5D029/LA11; 5D029/RA03; 5D029/RA04; 5D029/RA17; 5D029/RA46; 5D029/RA49; 5D029/WA02; 5D090/AA01; 5D090/BB03; 5D090/BB05; 5D090/BB12; 5D090/BB13; 5D090/CC12; 5D090/CC14; 5D090/DD01; 5D090/FF02; 5D090/FF11; 5D090/GG03; 5D090/HH01; 5D090/KK09 |

AB The title disk has a first substrate, which is with a guide groove and consists of: a first dye-contg. record-once read-many recording layer; a

first reflective layer; and an org. protective layer, an org. adhesive intermediate layer, and a second substrate which consists of: a third protective layer; Sb-Te based phase-change third recording layer; a second protective layer; a second reflective layer; an org. dye-contg. second recording layer; and a first protective layer, wherein the first and second recording layer is recorded/read out by irradiating a laser beam from the first substrate and wherein third recording layer is recorded/read out by irradiating a laser beam from the second substrate. The optical disk is manufd. without using a 2P process.

ST double sided record optical disk
IT Optical disks
(write-once read-many, double sided; double sided record-once read-many optical disks)

IT 1314-98-3, Zinc sulfide (ZnS), uses 7440-22-4, Silver, uses 7631-86-9, Silica, uses 330671-06-2, Kayarad DVD 003 ***660844-71-3***
RL: DEV (Device component use); USES (Uses)
(double sided record-once read-many optical disks)

IT 439591-91-0
RL: TEM (Technical or engineered material use); USES (Uses)
(double sided record-once read-many optical disks)

L7 ANSWER 2 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:428678 CAPLUS
DN 142:472666
ED Entered STN: 20 May 2005
TI Rewritable optical disk showing excellent storage stability and overwrite performance

IN Yamada, Katsuyuki; Narumi, Shinya; Kibe, Takeshi; Taniguchi, Kenshi; Yuzuhara, Hajime; Deguchi, Hiroshi
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2005129170 | A2 | 20050519 | JP 2003-365069 | 20031024 |
| PRAI | JP 2003-365069 | | 20031024 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2005129170 | ICM | G11B007-24 |
| | ICS | G11B007-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7] |
| | FTERM | 5D029/JA01; 5D029/JB35; 5D029/JC02; 5D029/JC17; 5D029/LB01; 5D029/LB02; 5D029/LB03; 5D029/LB07; 5D029/LB11; 5D029/MA13; 5D121/AA01; 5D121/AA04; 5D121/AA05; 5D121/EE01; 5D121/EE27; 5D121/GG26 |

AB The title rewritable optical disk comprises a substrate, a first protective layer having a layer thickness of 55.+-.10 nm, a first interface layer having a layer thickness of 2-7 nm, an optical recording layer contg. 69-90 at.% of Sb and having a layer thickness of 9-14 nm, a second interface layer having a layer thickness of 2-7 nm, a second protective layer, a third interface layer having a layer thickness of 2-9 nm, an optical reflective layer contg. .gtoreq.98 % of Ag, and a polymeric protective layer and/or an adhesive layer.

ST rewritable optical disk storage stability overwrite property layer thickness

IT Erasable optical disks
(rewritable optical disk showing excellent storage stability and overwrite performance)

IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(substrate; rewritable optical disk showing excellent storage stability and overwrite performance)

IT 409-21-2, Silicon carbide, processes 1314-23-4, Zirconia, processes 1344-28-1, Alumina, processes 13463-67-7, Titania, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (interface layer; rewritable optical disk showing excellent storage stability and overwrite performance)

IT 7440-22-4, Silver, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (optical reflective layer; rewritable optical disk showing excellent storage stability and overwrite performance)

IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (protective layer; rewritable optical disk showing excellent storage stability and overwrite performance)

IT ***660844-71-3*** ***851441-80-0*** 851441-81-1
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (recording layer; rewritable optical disk showing excellent storage stability and overwrite performance)

L7 ANSWER 3 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:402748 CAPLUS
 DN 142:438752
 ED Entered STN: 12 May 2005
 TI Phase-changeable optical recording material and is initialization method
 IN Deguchi, Hiroshi; Yuzuhara, Hajime; Suzuki, Eiko; Miura, Hiroshi; Abe, Mikiko; Narumi, Shinya; Kibe, Takeshi; Yamada, Katsuyuki; Taniguchi, Kenshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B41M005-26
 ICS G11B007-0045; G11B007-005; G11B007-0055; G11B007-24; G11B007-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|----------|
| PI JP 2005119242 | A2 | 20050512 | JP 2003-359655 | 20031020 |
| PRAI JP 2003-359655 | | 20031020 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2005119242 | ICM | B41M005-26 |
| | ICS | G11B007-0045; G11B007-005; G11B007-0055; G11B007-24; G11B007-26 |
| | IPCI | B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-005 [ICS,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |
| | FTERM | 2H111/EA05; 2H111/EA23; 2H111/FA01; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FA25; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB17; 2H111/FB21; 5D029/HA06; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/JB45; 5D029/LA14; 5D029/LB01; 5D029/LB07; 5D029/MA14; 5D029/WA02; 5D029/WB11; 5D029/WB17; 5D029/WC01; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/CC04; 5D090/CC11; 5D090/DD01; 5D090/GG03; 5D090/GG07; 5D121/AA01; 5D121/GG26 |

AB The material comprises a transparent support coated with an under protective layer, a recording layer, an upper protective layer, and a reflection layer, in which the recording layer contains a phase-changeable material AgInSbSbxTeyGec [a, b, x, y, c = at. ratio; $a + b + x + y + c = 1$; $a = 0-0.015$; $0.010 \leq b < 0.080$; $x = 0.600-0.800$; $y = 0.100-0.300$; $0.010 \leq c < 0.080$; $0.050 < a + b + c < 0.090$; $a/(a + b + c) \leq 0.10$]. The material is initialized at linear velocity from (V - 2) to (V + 1.0) m/s (V = recrystn. limiting velocity). The material shows good reliability on storage, recordable by CAV method, and overwriting jitter increasing is prevented.

ST phase changeable optical recording material; silver indium antimony tellurium germanium optical recording

IT Alkaline earth oxides
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dielec. layer contg.; phase-changeable optical recording material
 without jitter increasing on overwriting)

IT Erasable optical disks
 (phase-changeable optical recording material without jitter increasing
 on overwriting)

IT 173615-45-7, Titanium yttrium zirconium oxide (Ti0.4Y0.04Zr0.58O2.02)
 227175-62-4, Titanium yttrium zirconium oxide (Ti0.1Y0.05Zr0.87O2.03)
 249759-85-1, Titanium yttrium zirconium oxide (Ti0.2Y0.05Zr0.78O2.02)
 850799-07-4, Titanium yttrium zirconium oxide (Ti0.5Y0.03Zr0.48O2.02)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dielec. layer; phase-changeable optical recording material without
 jitter increasing on overwriting)

IT 384829-18-9 ***660844-71-3*** 850799-00-7 ***850799-01-8***
 850799-02-9 ***850799-03-0*** ***850799-04-1***
 850799-05-2 ***850799-06-3***
 RL: TEM (Technical or engineered material use); USES (Uses)
 (phase-changeable optical recording material without jitter increasing
 on overwriting)

L7 ANSWER 4 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1058753 CAPLUS

DN 142:45980

ED Entered STN: 10 Dec 2004

TI Optical recording tape for reliable high density recording

IN Shinokawa, Taiji; Morita, Takeshi

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004348912 | A2 | 20041209 | JP 2003-147296 | 20030526 |
| PRAI | JP 2003-147296 | | 20030526 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2004348912 | ICM | G11B007-24 |
| | IPCI | G11B0007-24 [ICM,7] |
| | FTERM | 5D029/HA07; 5D029/TB03 |

AB The title optical recording tape comprises a recording layer and a
 protective layer on one side of a polymer support and a back coat layer on
 the other side of the polymer support, wherein the recording layer
 together with the protective layer shows a Young's modulus of 15-65 GPa in
 a length direction.

ST optical recording tape elastic modulus protective layer back coat

IT Optical recording materials

(optical recording tape for reliable high d. recording)

IT Polyesters, uses

RL: DEV (Device component use); USES (Uses)

(optical recording tape for reliable high d. recording)

IT 7440-22-4, Silver, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)

(protective layer; optical recording tape for reliable high d.
 recording)

IT 805246-88-2 805246-89-3 805246-90-6 805246-91-7 ***805246-92-8***
 805246-93-9 805246-94-0

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)

(recording layer; optical recording tape for reliable high d.
 recording)

IT 25038-59-9, uses

RL: DEV (Device component use); USES (Uses)

(support; optical recording tape for reliable high d. recording)

L7 ANSWER 5 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2004:841938 CAPLUS
 DN 141:340493
 ED Entered STN: 15 Oct 2004
 TI Phase changeable optical recording material having initialized phase of controlled orientation
 IN Abe, Mikiko; Yuzuhara, Hajime; Deguchi, Hiroshi; Suzuki, Eiko; Miura, Hiroshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B41M005-26
 ICS G11B007-24; G11B007-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2004284024 | A2 | 20041014 | JP 2003-75317 | 20030319 |
| PRAI | JP 2003-75317 | | 20030319 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2004284024 | ICM | B41M005-26 |
| | ICS | G11B007-24; G11B007-26 |
| | IPCI | B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |
| | FTERM | 2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA41; 2H111/FA12; 2H111/FA14; 2H111/FA24; 2H111/FB05; 2H111/FB06; 2H111/FB07; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB18; 2H111/FB19; 2H111/FB20; 2H111/FB21; 2H111/FB30; 5D029/HA06; 5D029/JA01; 5D029/JB35; 5D029/JC18; 5D029/LA14; 5D029/LB01; 5D029/LB07; 5D029/LB11; 5D121/AA01; 5D121/GG26 |

AB In the material comprising a support with tracks successively coated with 1st protective layer, a recording layer which changes between crystal and amorphous phases, 2nd protective layer, and a reflective layer, the crystal phase of the initialized recording layer with face interval 2.9-3.3 .ANG. and vertical to the support is oriented to have an angle of 30.+-.15.degree. to tangential line of the track. The material shows good recording and reading properties by laser beam.

ST phase change optical recording material crystal phase orientation; germanium antimony tellurium laser sensitive optical recording material

IT Optical recording materials

(erasable; phase changeable optical recording material having initialized phase of controlled orientation)

IT 7429-91-6, Dysprosium, uses 7439-92-1, Lead, uses 7439-96-5, Manganese, uses 7439-97-6, Mercury, uses 7440-22-4, Silver, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-55-3, Gallium, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(antimony-gallium-tellurium layer contg.; phase changeable optical recording material having initialized phase of controlled orientation)

IT 1314-36-9, Yttria, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(metal oxide layer between recording layer and protective layer; phase changeable optical recording material having initialized phase of controlled orientation)

IT 1312-43-2, Indium oxide 1314-13-2, Zinca, uses 1314-23-4, Zirconia, uses 1317-36-8, Lead oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses 21651-19-4, Tin oxide (SnO)
 RL: TEM (Technical or engineered material use); USES (Uses)

(metal oxide layer between recording layer and protective layer; phase changeable optical recording material having initialized phase of controlled orientation)

IT 773104-42-0 ***773104-43-1*** ***773104-44-2*** 773104-45-3

RL: TEM (Technical or engineered material use); USES (Uses)
(phase changeable optical recording material having initialized phase
of controlled orientation)

L7 ANSWER 6 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:759253 CAPLUS
DN 141:285884
ED Entered STN: 17 Sep 2004
TI Multilayer phase change type information recording medium showing
excellent recording properties and its recording and readout method
IN Iwasa, Hiroyuki; Shinotsuka, Michiaki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS B41M005-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2004259382 | A2 | 20040916 | JP 2003-49984 | 20030226 |
| PRAI | JP 2003-49984 | | 20030226 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2004259382 | ICM | G11B007-24 |
| | ICS | B41M005-26 |
| | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7] |
| | FTERM | 2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA32; 2H111/EA37; 2H111/EA40; 2H111/FA02; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA24; 2H111/FA25; 2H111/FA26; 2H111/FA27; 2H111/FA28; 2H111/FB04; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB15; 2H111/FB16; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB23; 2H111/FB28; 2H111/FB29; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/JB47; 5D029/JC04; 5D029/KB14; 5D029/LB11; 5D029/LC04; 5D029/MA27 |

AB The title information recording medium includes one optical reflection
layer (3-20 nm thick) comprising Ag and 0.1-10 % of oxide selected from
In2O3, SnO2, ZnO, CdO, TiO2, CdIn2O4, Cd2SnO2, and Zn2SnO4. The recording
layer comprises Sb-Te.

ST multilayer phase change optical recording disk reflection layer oxide
IT Erasable optical disks

(multilayer phase change type information recording medium and its
recording and readout method)

IT 24304-00-5, Aluminum nitride

RL: DEV (Device component use); USES (Uses)

(diffusion layer; multilayer phase change type information recording
medium and its recording and readout method)

IT 1306-19-0, Cadmium oxide, uses 1312-43-2, Indium oxide 1314-13-2, Zinc
oxide, uses 7440-22-4, Silver, uses 12014-04-9, Cadmium indium oxide
(CdIn2O4) 12143-46-3, Tin zinc oxide (SnZn2O4) 13463-67-7, Titania,
uses 18282-10-5, Tin oxide (SnO2) 50926-11-9, ITO 128689-94-1,
Cadmium tin oxide (Cd2SnO2)

RL: DEV (Device component use); USES (Uses)

(optical reflection layer; multilayer phase change type information
recording medium and its recording and readout method)

IT ***714276-02-5*** 717887-71-3

RL: DEV (Device component use); USES (Uses)

(recording layer; multilayer phase change type information recording
medium and its recording and readout method)

L7 ANSWER 7 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:550510 CAPLUS

DN 141:114135

ED Entered STN: 09 Jul 2004

TI Phase change information recording medium having multiple layers and
recording and playback method for the medium

IN Iwasa, Hiroyuki; Shinotsuka, Michiaki; Shinkai, Masaru
PA Ricoh Company, Ltd., Japan
SO U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM G11B007-24
INCL 369094000; 430270130; 369288000
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | US 2004130998 | A1 | 20040708 | US 2003-738012 | 20031216 |
| | JP 2005004943 | A2 | 20050106 | JP 2003-425588 | 20031222 |
| PRAI | JP 2002-370834 | A | 20021220 | | |
| | JP 2003-142669 | A | 20030520 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|--|--|
| US 2004130998 | ICM | G11B007-24 |
| | INCL | 369094000; 430270130; 369288000 |
| | IPCI | G11B0007-24 [ICM,7] |
| | NCL | 369/094.000 |
| | ECLA | G11B007/24S4 |
| JP 2005004943 | IPCI | G11B0007-24 [ICM,7]; G11B0007-0045 [ICS,7] |
| | FTERM | 5D029/JA01; 5D029/JB03; 5D029/JB05; 5D029/JB35; 5D029/JC04; 5D029/KB14; 5D029/LA14; 5D029/LB07; 5D029/LB11; 5D029/LC16; 5D029/MA13; 5D029/MA14; 5D029/MA27; 5D090/AA01; 5D090/BB05; 5D090/BB12; 5D090/DD01; 5D090/EE01; 5D090/EE05; 5D090/KK06 |
| AB | A multilayer phase change information recording medium including plural information layers contg. at least a first information layer and a last information layer, each of which includes a recording layer in which information is recorded utilizing a phase change between a cryst. phase and an amorphous phase. At least one of the plural information layers other than the last information layer includes a first lower protective layer, a first recording layer located overlying the lower protective layer, a first upper protective layer located overlying the first recording layer, a first reflective layer located overlying the first upper protective layer, and a heat diffusion layer located overlying the first reflective layer and which mainly contains In, Zn and O. | |
| ST | phase change information recording medium disk multiple layer playback | |
| IT | Optical disks (phase change information recording medium having multiple layers) | |
| IT | 7440-66-6, Zinc, uses 7440-74-6, Indium, uses RL: DEV (Device component use); USES (Uses) (phase change information recording medium having multiple layers contg.) | |
| IT | 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses RL: DEV (Device component use); USES (Uses) (protective layer; phase change information recording medium having multiple layers contg.) | |
| IT | ***714276-02-5*** 717887-71-3 RL: DEV (Device component use); USES (Uses) (recording layer; phase change information recording medium having multiple layers contg.) | |
| IT | 106921-99-7, Aluminum 98, titanium 2 (atomic) 348115-91-3, Copper 1, Palladium 1, Silver 98 (atomic) 717887-72-4 RL: DEV (Device component use); USES (Uses) (reflective layer; phase change information recording medium having multiple layers contg.) | |

L7 ANSWER 8 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:533214 CAPLUS

DN 141:96756

ED Entered STN: 02 Jul 2004

TI Multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manufacture

IN Iwasa, Hiroyuki; Shinotsuka, Michiaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS B41M005-26; G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004185744 | A2 | 20040702 | JP 2002-352940 | 20021204 |
| PRAI | JP 2002-352940 | | 20021204 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2004185744 | ICM | G11B007-24 |
| | ICS | B41M005-26; G11B007-26 |
| | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-26 [ICS,7] |
| | FTERM | 2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA37; 2H111/EA41; 2H111/FA02; 2H111/FA12; 2H111/FA14; 2H111/FA18; 2H111/FA25; 2H111/FA26; 2H111/FA27; 2H111/FA28; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB15; 2H111/FB16; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB22; 2H111/FB23; 2H111/FB27; 2H111/GA00; 5D029/JA01; 5D029/JB13; 5D029/JB18; 5D029/JB35; 5D029/KB14; 5D029/LA12; 5D029/LA14; 5D029/LA16; 5D029/LA17; 5D029/LB07; 5D029/LC06; 5D029/MA13; 5D029/MA14; 5D029/MA27; 5D029/RA03; 5D029/RA04; 5D121/AA07; 5D121/EE01; 5D121/EE28; 5D121/FF00; 5D121/GG26 |

AB In the title optical disk, a protective coating layer and a heat-diffusion layer satisfy specified relations between their layer thicknesses and refractive indexes. The heat-diffusion layer may be made up of ITO and the protective coating layer may be made up of ZnS and SiO₂, and the recording layer may be made up of Sb and Te.

ST optical disk multilayer phase change cooling efficiency manuf

IT Optical disks

(multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

IT 50926-11-9, ITO

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(heat-diffusion layer; multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(protective coating layer; multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

IT ***714276-02-5***

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(recording layer; multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

L7 ANSWER 9 OF 51 CAPLUS COPYRIGHT 2006 ACS on STM

AN 2004:330949 CAPLUS

DN 140:347629

ED Entered STN: 23 Apr 2004

TI Initialization of phase change optical disk made from antimony and tellurium form improved recording characteristics

IN Deguchi, Hiroshi; Suzuki, Eiko; Yuzuhara, Hajime; Miura, Hiroshi; Abe, Mikiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent
LA Japanese
IC ICM G11B007-26
ICS B41M005-26; G11B007-0055; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 75
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004127485 | A2 | 20040422 | JP 2003-203213 | 20030729 |
| PRAI | JP 2002-222470 | A | 20020731 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2004127485 | ICM | G11B007-26 |
| | ICS | B41M005-26; G11B007-0055; G11B007-24 |
| | IPCI | G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7] |
| | FTERM | 2H111/EA04; 2H111/EA05; 2H111/EA23; 2H111/EA31; 2H111/FA01; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FB05; 2H111/FB09; 2H111/FB12; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/LB07; 5D029/MA14; 5D090/AA01; 5D090/BB05; 5D090/CC11; 5D090/DD01; 5D121/AA01; 5D121/GG26 |

AB The process is carried out under the crystn. condition in which the recording layer contg. Sb and Te gives P1/P2.gtoreq.10 in the x-ray diffraction pattern, wherein P1 is the peak intensity at 2.theta. = 27-31.degree. and P2 is the peak intensity at 2.theta. = 39-44.degree..
The recording layer further contains Ge.

ST initialization crystn phase change optical disk

IT Crystallization

Optical disks

(initialization of phase change optical disk made from antimony and tellurium)

| | | | | | |
|----|-------------|-------------|-------------|-------------------|-------------|
| IT | 667416-58-2 | 667416-59-3 | 667416-60-6 | 667416-61-7 | 667416-63-9 |
| | 667416-64-0 | 667416-65-1 | 667416-66-2 | ***667416-67-3*** | |
| | 681161-41-1 | | | | |

RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(initialization of phase change optical disk made from antimony and tellurium)

L7 ANSWER 10 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:180515 CAPLUS

DN 140:243650

ED Entered STN: 05 Mar 2004

TI Phase change type optical disk and its initialization

IN Deguchi, Hiroshi; Suzuki, Eiko; Yuzuhara, Hajime; Miura, Hiroshi; Abe, Mikiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26

ICS G11B007-0055; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004071025 | A2 | 20040304 | JP 2002-227247 | 20020805 |
| PRAI | JP 2002-227247 | | 20020805 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2004071025 | ICM | G11B007-26 |
| | ICS | G11B007-0055; G11B007-24 |
| | IPCI | G11B0007-26 [ICM,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7] |
| | FTERM | 5D029/HA06; 5D029/JA01; 5D029/JB18; 5D029/JB35; |

5D029/LB07; 5D029/MA14; 5D090/AA01; 5D090/BB05;
5D090/CC11; 5D090/DD01; 5D121/AA01; 5D121/GG26

AB The invention relates to an optical disk having a phase change type recording layer made mainly up of Sb and Te, wherein the initialized recording layer satisfies a $P1/P2 \geq 5.0$ [$P1$ = x-ray diffraction peak intensity at 27-31.degree.; $P2$ = x-ray diffraction peak intensity at 39-44.degree.]. The optical disk initialization is carried out by a specified laser scanning rate.

ST optical disk phase change type initialization antimony tellurium
IT Optical disks
(phase change type optical disk and its initialization)

IT 667416-58-2 667416-59-3 667416-60-6 667416-61-7 667416-62-8
667416-63-9 667416-64-0 667416-65-1 667416-66-2 ***667416-67-3***
RL: DEV (Device component use); USES (Uses)
(recording layer of phase change type optical disk for new initialization method)

L7 ANSWER 11 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:139791 CAPLUS
DN 140:207531
ED Entered STN: 20 Feb 2004
TI Rewritable phase-change optical recording medium such as optical disk
IN Suzuki, Eiko; Yuzuhara, Hajime; Deguchi, Hiroshi; Miura, Hiroshi; Abe, Mikiko; Tashiro, Hiroko; Yamada, Katsuyuki; Narumi, Shinya; Kibe, Takeshi; Taniguchi, Kenshi
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004055113 | A2 | 20040219 | JP 2003-10938 | 20030120 |
| PRAI | JP 2002-154429 | A | 20020528 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2004055113 | ICM | G11B007-24 |
| | IPCI | G11B0007-24 [ICM,7] |
| | FTERM | 5D029/JA01; 5D029/JB35; 5D029/LA14; 5D029/LA15; 5D029/LB07; 5D029/MA14; 5D029/MA17; 5D029/NA13; 5D029/NA23 |

AB The title medium has a phase-change recording layer contg. material reversibly changing the phase between amorphous and crystal phase on a substrate, wherein the crystal phase after the initial crystn. and before recording has 20-50.degree. tilted angle against the grain boundary towards recording tracks. The medium shows good rewriting characteristics under high linear recording for many times.

ST rewritable phase optical recording disk grain boundary
IT Erasable optical disks
(phase-change; rewritable phase-change optical recording medium)

IT Optical recording materials
(rewritable phase-change optical recording medium)

IT 660844-67-7 660844-68-8 660844-69-9 660844-70-2 ***660844-71-3***
RL: DEV (Device component use); USES (Uses)
(recording layer of rewritable phase-change optical recording medium)

L7 ANSWER 12 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:118546 CAPLUS
DN 140:190044
ED Entered STN: 13 Feb 2004
TI Phase-change optical recording media such as optical disk and method for recording thereon
IN Yuzuhara, Hajime; Abe, Mikiko; Deguchi, Hiroshi; Miura, Hiroshi; Suzuki, Eiko
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
IC ICM G11B007-24
ICS B41M005-26; G11B007-0045; G11B007-125
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004046956 | A2 | 20040212 | JP 2002-201667 | 20020710 |
| PRAI | JP 2002-201667 | | 20020710 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2004046956 | ICM | G11B007-24 |
| | ICS | B41M005-26; G11B007-0045; G11B007-125 |
| | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-125 [ICS,7] |
| | FTERM | 2H111/EA04; 2H111/EA23; 2H111/EA31; 2H111/EA36; 2H111/FA01; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FA23; 2H111/FA24; 2H111/FA25; 2H111/FA27; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB21; 2H111/FB30; 5D029/JA01; 5D029/JB18; 5D029/JC20; 5D029/LA14; 5D029/LA15; 5D029/LB01; 5D029/LB04; 5D029/MA13; 5D029/NA13; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/DD01; 5D090/EE01; 5D090/HH01; 5D090/KK03; 5D090/KK05; 5D119/AA21; 5D119/AA24; 5D119/BA01; 5D119/BB04; 5D119/DA01; 5D119/DA02; 5D119/DA07; 5D119/EC09; 5D119/HA45; 5D119/HA52; 5D789/AA21; 5D789/AA24; 5D789/BA01; 5D789/BB04; 5D789/DA01; 5D789/DA02; 5D789/DA07; 5D789/EC09; 5D789/HA45; 5D789/HA52 |

AB The title medium has a first dielec. protective layer, a phase-change recording layer, a second dielec. protective layer, and a reflective layer on a substrate, wherein the upper linear velocity(Vcu) of recrystn. of the recording layer is between max. recording linear velocity and min. recording linear velocity and satisfies equation:
 $(V_{max} + V_{min})/2 < V_{cu} < \{(V_{max} + V_{min})/2\} + 3$. The medium is for high linear speed recording and also is suitable for low speed recording.

ST optical recording media phase change

IT Erasable optical disks

(phase-change; optical recording media and method for recording using the same)

IT ***657403-84-4*** 657403-85-5 ***657403-86-6***
657403-87-7 657403-88-8 ***657403-89-9*** 657403-90-2
657403-91-3 657403-92-4 657403-93-5 657403-94-6 657403-95-7

RL: DEV (Device component use); USES (Uses)

(phase-change recording layer of optical recording media)

L7 ANSWER 13 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:930030 CAPLUS

DN 139:401609

ED Entered STN: 28 Nov 2003

TI Phase-change optical disks with high-speed recording property and corrosion resistance and their manufacture

IN Mizutani, Miki; Ito, Kazunori; Harigai, Masato; Deguchi, Hiroshi; Tashiro, Hiroko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS B41M005-26; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 56

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|------|----------|-----------------|----------|
| PI | JP 2003338085 | A2 | 20031128 | JP 2002-150715 | 20020524 |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2003338085 | ICM | G11B007-24 |
| | ICS | B41M005-26; G11B007-26 |
| | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-26 [ICS,7] |

AB The disks have heat-dissipating reflective layers made of Ag (alloy) with av. in-plane crystal size .ltoreq.0.15 .mu.m formed on recording layers (e.g., Ag_{0.5}In_{5.0}Sb_{68.5}Te_{24.0}Ge_{2.0}). The reflective layers maybe semitransparent and be included in laminated optical disks. The reflective layers are formed by sputtering in prescribed conditions.

ST phase change disk silver alloy reflective layer; optical disk silver alloy heat dissipating reflective; DVD sputtering silver alloy corrosion resistance; silver indium antimony tellurium germanium DVD reflective

IT Erasable optical disks
(phase-change; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT Sputtering
(sputter deposition; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT Silver alloy, base
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(heat-dissipating reflective layer; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT 7440-22-4, Silver, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(heat-dissipating reflective layer; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT ***384829-20-3*** 627098-14-0 627098-15-1
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(sputtering gas; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

L7 ANSWER 14 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:921405 CAPLUS

DN 139:401603

ED Entered STN: 25 Nov 2003

TI Optical recording material containing antimony tellurium germanium indium silver

IN Tabata, Hiroshi; Kobayashi, Satoru; Kubo, Naoyuki; Yoshikawa, Masashi

PA Victor Co. of Japan, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26
ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|----------|
| PI JP 2003335063 | A2 | 20031125 | JP 2002-145777 | 20020521 |
| PRAI JP 2002-145777 | | 20020521 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2003335063 | ICM | B41M005-26 |
| | ICS | G11B007-24 |
| | IPCI | B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7] |

AB The material comprises a support successively coated with 1st protective layer, a recording layer (SbxTey)aGebIncAgd (2.5.ltoreq. x/y .ltoreq.3.5; 0.85.ltoreq. a .ltoreq.0.95; 0.03.ltoreq. b .ltoreq.0.1; 0.005.ltoreq. c .ltoreq.0.05; 0.001 .ltoreq. d .ltoreq.0.03; a + b + c + d = 1), 2nd protective layer, and a reflection layer. The material shows low influence of recording strategy in wide liner velocity range and good recording properties.

ST optical recording material antimony tellurium germanium indium silver

IT Optical recording materials
(optical recording material with low recording strategy influence)

IT 627076-88-4 627076-89-5 627076-90-8 627076-91-9 ***627076-92-0***
627076-93-1 627076-94-2 627076-95-3 627076-96-4
RL: DEV (Device component use); USES (Uses)
(optical recording material with low recording strategy influence)

IT 58739-36-9 627076-97-5
RL: DEV (Device component use); USES (Uses)
(reflection layer; optical recording material with low recording strategy influence)

L7 ANSWER 15 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:815622 CAPLUS

DN 139:315495

ED Entered STN: 17 Oct 2003

TI Current-induced phase-convertible alloys for semiconductor memory devices

IN Ito, Kazunori

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01L027-10
ICS H01L045-00

CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2003298013 | A2 | 20031017 | JP 2002-98460 | 20020401 |
| PRAI | JP 2002-98460 | | 20020401 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2003298013 | ICM | H01L027-10 |
| | ICS | H01L045-00 |
| | IPCI | H01L0027-10 [ICM,7]; H01L0045-00 [ICS,7] |

AB The title materials become a high-resistance amorphous phase by impression of pulsed current and become a low-resistance crystal phase by decreasing current slowly. Such materials are SbTe contg. .ltoreq.15 at.% additive metals contg. In, Ag, and Ge. A FET in the semiconductor memory devices comprise a source, a gate, and a drain which are connected to a word line, a bit line, and a ground line through a phase-convertible material, resp. The materials are useful in fine and precision integration in semiconductor memory devices.

ST antimony telluride phase convertible alloy current resistance semiconductor memory

IT Electric resistance
(change by phase transition; current-impression phase-convertible materials for semiconductor memory devices)

IT Field effect transistors
Semiconductor memory devices
(current-impression phase-convertible materials for semiconductor memory devices)

IT Phase transition
(current-induced; current-impression phase-convertible materials for semiconductor memory devices)

IT Electric cables
(ground, current-induced phase-convertible alloys for; current-impression phase-convertible materials for semiconductor memory devices)

IT Electric current
(pulsing/decreasing; current-impression phase-convertible materials for semiconductor memory devices)

IT 12067-31-1, Antimony telluride (SbTe)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(In and Ag and Ge-contg., for phase-convertible alloy;
current-impression phase-convertible materials for semiconductor memory
devices)
IT ***524009-12-9*** , Antimony 60-70, germanium 1-7, indium 1-10, silver
0-1, tellurium 20-30 (atomic)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(phase transition alloy; current-impression phase-convertible materials
for semiconductor memory devices)

L7 ANSWER 16 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:815366 CAPLUS
DN 139:314568
ED Entered STN: 17 Oct 2003
TI Phase change optical disks and method and apparatus for information
recording
IN Ito, Kazunori; Harigai, Masato; Tashiro, Hiroko; Mizutani, Miki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS B41M005-26; G11B007-004; G11B007-0045; G11B007-125
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2003296966 | A2 | 20031017 | JP 2002-98596 | 20020401 |
| PRAI | JP 2002-98596 | | 20020401 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2003296966 | ICM | G11B007-24 |
| | ICS | B41M005-26; G11B007-004; G11B007-0045; G11B007-125 |
| | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-004 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-125 [ICS,7] |

AB The recording layers of the disks comprise .gtoreq.2 phase-changing
layers, having different chem. compns. for neighboring layers.
Preferably, the phase-changing layers may be sepd. with interlayers.
Recording of information in the disks is carried out with optical beams
having irradsn. powers of Pw, Pe, and Pb, where Pw >Pe >Pb, with
simultaneous modulation of Pw and Pe. App. for carrying out the process
is also claimed. The disks have high recording d.

ST phase change optical disk high density recording; multi phase change layer
optical disks

IT Optical recording
(including superimposed modulated signals; high-d. optical disks with
multilayered phase change layers and method and app. for their
information recording)

IT Optical disks
(phase change; high-d. optical disks with multilayered phase change
layers and method and app. for their information recording)

IT 7429-91-6, Dysprosium, uses 7439-95-4, Magnesium, uses 7439-96-5,
Manganese, uses 7440-21-3, Silicon, uses 7440-55-3, Gallium, uses
7440-70-2, Calcium, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)

(alloying element in Sb-Te alloy phase change layers; high-d. optical
disks with multilayered phase change layers and method and app. for
their information recording)

IT ***406496-61-5*** 612508-87-9 612508-96-0
RL: TEM (Technical or engineered material use); USES (Uses)
(high-d. optical disks with multilayered phase change layers and method
and app. for their information recording)

IT 409-21-2, Silicon carbide (SiC), uses 12033-89-5, Silicon nitride, uses
24304-00-5, Aluminum nitride (AlN) 50926-11-9, ITO
RL: TEM (Technical or engineered material use); USES (Uses)
(interlayer; high-d. optical disks with multilayered phase change

L7 ANSWER 17 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:717286 CAPLUS
 DN 139:205101
 ED Entered STN: 12 Sep 2003
 TI Optical recording medium and method for manufacturing the optical recording medium
 IN Yamada, Katsuyuki; Nakamura, Yuki; Narumi, Shinya; Kato, Masaki
 PA Ricoh Company, Japan
 SO Eur. Pat. Appl., 31 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G11B007-24
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 1343155 | A2 | 20030910 | EP 2003-5056 | 20030306 |
| | EP 1343155 | A3 | 20040310 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | JP 2003272232 | A2 | 20030926 | JP 2002-75052 | 20020318 |
| | JP 2003331470 | A2 | 20031121 | JP 2002-89736 | 20020327 |
| | CN 1444215 | A | 20030924 | CN 2003-119905 | 20030303 |
| | US 2003214902 | A1 | 20031120 | US 2003-384452 | 20030307 |
| PRAI | JP 2002-62608 | A | 20020307 | | |
| | JP 2002-75052 | A | 20020318 | | |
| | JP 2002-89736 | A | 20020327 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| EP 1343155 | ICM | G11B007-24 |
| | IPCI | G11B0007-24 [ICM,7] |
| | ECLA | G11B007/257 |
| JP 2003272232 | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7] |
| JP 2003331470 | IPCI | G11B0007-24 [ICM,7]; C23C0014-34 [ICS,7]; G11B0007-26 [ICS,7] |
| CN 1444215 | IPCI | G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7] |
| US 2003214902 | IPCI | G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7]; B32B0003-02 [ICS,7]; C23C0014-34 [ICS,7]; C23C0014-08 [ICS,7] |
| | IPCR | G11B0007-24 [I,C]; G11B0007-257 [I,A] |
| | NCL | 369/275.500 |
| | ECLA | G11B007/257 |

AB An optical recording medium includes a substrate having guide groove thereon; a first protective layer located overlying the substrate; a recording layer located overlying the first protective layer; a second protective layer located overlying the recording layer; a third protective layer of 2-9 nm thick located overlying the second protective layer and comprising Si in an amt. not less than 35 at. percent; and a reflection layer including Ag in an amt. not less than 95 %. An overcoat layer having a glass transition temp. of from 90-180 .degree.C is preferably formed overlying the reflection layer. A method for manufg. the optical recording medium is also provided.

ST optical recording medium manufg

IT Optical disks

Optical recording materials

(optical recording medium and method for manufg. optical recording medium)

IT ***384829-20-3*** 586416-03-7

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(optical recording medium and method for manufg. optical recording medium contg.)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)

(protective layer; optical recording medium and method for manufg. optical recording medium contg.)

IT 409-21-2, Silicon carbide, properties

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(protective layer; optical recording medium and method for manufg.

optical recording medium contg.)
 IT 586415-99-8
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (recording layer; optical recording medium and method for manufg.
 optical recording medium contg.)
 IT 7440-22-4, Silver, properties 586416-05-9
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (reflection layer; optical recording medium and method for manufg.
 optical recording medium contg.)

L7 ANSWER 18 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:373952 CAPLUS
 DN 138:376500
 ED Entered STN: 16 May 2003
 TI Phase-change optical recording medium and apparatus for recording
 information in it
 IN Ito, Kazunori; Yuzuhara, Hajime; Yamada, Katsuyuki; Narumi, Shinya; Onagi,
 Nobuaki
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-0045
 ICS G11B007-006; G11B007-125; G11B007-24
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|----------|
| JP 2003141730 | A2 | 20030516 | JP 2001-336672 | 20011101 |
| PRAI JP 2001-336672 | | 20011101 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2003141730 | ICM | G11B007-0045 |
| | ICS | G11B007-006; G11B007-125; G11B007-24 |
| | IPCI | G11B0007-0045 [ICM,7]; G11B0007-006 [ICS,7]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7] |

 AB The recording medium has a recording layer which reversibly transforms
 between a crystal phase and an amorphous phase by irradiation of multipulse
 laser beam. The laser beam comprises combinations of plural kinds of
 heating pulses at laser power Pw and cooling pulse at laser power Pb for
 formation of the amorphous phase (data region) and erasing pulse at laser
 power Pe for formation of the crystal phase (space region), where relation
 of the laser powers are $P_w > P_e > P_b$, and the Pe has .gtoreq.2 conditions
 showing the min. jitter values. The title app. is equipped with a laser
 source, its controller, and a Pe power selection means. The recording
 medium has low-jitter recording properties and excellent direct overwrite
 (DOW) properties even under high recording linear velocity.
 ST phase change optical recording medium direct overwrite jitter; information
 recording app multipulse laser rewritable optical disk
 IT Erasable optical disks
 Recording apparatus
 (app. for recording information in phase-change optical recording
 medium by irradiation of multipulse laser beam)
 IT Laser radiation
 (pulsed; app. for recording information in phase-change optical
 recording medium by irradiation of multipulse laser beam)
 IT ***524009-12-9***
 RL: DEV (Device component use); USES (Uses)
 (recording layer; app. for recording information in phase-change
 optical recording medium by irradiation of multipulse laser beam)

L7 ANSWER 19 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:334349 CAPLUS
 DN 138:329066
 ED Entered STN: 02 May 2003
 TI Information recording medium
 IN Shinotsuka, Michiaki
 PA Ricoh Company, Ltd., Japan
 SO U.S. Pat. Appl. Publ., 22 pp.

CODEN: USXXCO
DT Patent
LA English
IC ICM G11B007-24
INCL 369275400; 430270130; 369283000
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | US 2003081537 | A1 | 20030501 | US 2002-245404 | 20020917 |
| | JP 2003091874 | A2 | 20030328 | JP 2001-283251 | 20010918 |
| | JP 2003115129 | A2 | 20030418 | JP 2001-306408 | 20011002 |
| | JP 2003228884 | A2 | 20030815 | JP 2002-341620 | 20021126 |
| PRAI | JP 2001-283251 | A | 20010918 | | |
| | JP 2001-306408 | A | 20011002 | | |
| | JP 2001-360178 | A | 20011127 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| US 2003081537 | ICM | G11B007-24 |
| | INCL | 369275400; 430270130; 369283000 |
| | IPCI | G11B0007-24 [ICM,7] |
| | NCL | 369/275.400 |
| | ECLA | G11B007/243; G11B007/254; G11B007/257; G11B007/258 |
| JP 2003091874 | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |
| JP 2003115129 | IPCI | G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7] |
| JP 2003228884 | IPCI | G11B0007-24 [ICM,7]; G03C0001-725 [ICS,7] |

AB An optical recording medium configured with a light reflection layer; a first protection layer; a recording layer contg. a phase-change material which changes between cryst. and amorphous phases by a light irradiation; a second protection layer; and one of a cover layer and a protective coating layer disposed on a substrate in this order; and in which the light reflection layer is formed of one of an Al alloy and an Ag alloy; the first protection layer has a ZnS-SiO2 mixt. layer which contains a mixt. of ZnS and SiO2, and a intermediate layer having higher thermal cond. than the ZnS-SiO2 mixt. layer; the intermediate layer is formed on the side of the light reflection layer; the recording layer comprises Ge, Sb, and Te as main elements; and the second protection layer comprises a mixt. of ZnS and SiO2.

ST information recording medium

IT Coating materials

Optical disks

Optical recording materials

(information recording medium)

IT Films

(reflective; information recording medium)

IT 1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 1344-28-1, Aluminum oxide, uses 7631-86-9, Silica, uses 24304-00-5, Aluminum nitride 57686-82-5 ***484058-50-6***

RL: DEV (Device component use); USES (Uses)

(information recording medium contg.)

L7 ANSWER 20 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:240226 CAPLUS

DN 138:262763

ED Entered STN: 28 Mar 2003

TI Phase-changeable optical recording material with rapid cooling structure

IN Shinotsuka, Michiaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS G11B007-24; B41M005-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 73

FAN.CNT 3

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

| | | | | | |
|------|----------------|----|----------|----------------|----------|
| PI | JP 2003091874 | A2 | 20030328 | JP 2001-283251 | 20010918 |
| | US 2003081537 | A1 | 20030501 | US 2002-245404 | 20020917 |
| PRAI | JP 2001-283251 | A | 20010918 | | |
| | JP 2001-306408 | A | 20011002 | | |
| | JP 2001-360178 | A | 20011127 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2003091874 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |
| US 2003081537 | IPCI | G11B0007-24 [ICM,7] |
| | IPCR | G11B0007-00 [N,C]; G11B0007-0045 [N,A]; G11B0007-24 [N,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258 [I,A] |
| | NCL | 369/275.400 |
| | ECLA | G11B007/243; G11B007/254; G11B007/257; G11B007/258 |
| AB | | The material, using phase change between crystal and amorphous by irradiation of light, comprises a pregrooved support successively coated with (A) a reflection and heat radiation layer made of Al alloy, (B) 1st protective layer successively comprising (a) Ta2O5 layer and (b) a layer made of mixture of ZnS and SiO2 from the A layer side, (C) a recording layer mainly comprising Ge, Sb, and Te, (D) 2nd protective layer made of a mixture of ZnS and SiO2, and (E) an adhesive layer and a cover layer. The material is capable of rapid cooling and suited for high speed recording. |
| ST | | phase changeable writable optical recording material; protective layer tantalum oxide zinc sulfide silica; germanium tellurium antimony optical recording material |
| IT | | Polycarbonates, uses RL: DEV (Device component use); USES (Uses) (cover layer; phase-changeable optical recording material with rapid cooling structure) |
| IT | | Optical ROM disks Optical recording materials (rewritable; phase-changeable optical recording material with rapid cooling structure) |
| IT | | 403501-78-0, DA 8310 RL: DEV (Device component use); USES (Uses) (adhesive layer; phase-changeable optical recording material with rapid cooling structure) |
| IT | | 1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses RL: DEV (Device component use); USES (Uses) (protective layer; phase-changeable optical recording material with rapid cooling structure) |
| IT | | ***484058-50-6*** RL: DEV (Device component use); USES (Uses) (recording layer; phase-changeable optical recording material with rapid cooling structure) |
| IT | | 156653-68-8 RL: DEV (Device component use); USES (Uses) (reflection and heat radiation layer; phase-changeable optical recording material with rapid cooling structure) |

L7 ANSWER 21 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:240223 CAPLUS
DN 138:278492
ED Entered STN: 28 Mar 2003
TI Multilayer phase change type information recording medium
IN Iwasa, Hiroyuki; Miura, Hiroshi; Shinotsuka, Michiaki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2003091869 | A2 | 20030328 | JP 2001-282959 | 20010918 |
| PRAI | JP 2001-282959 | | 20010918 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|--|-------------|---|
| | JP 2003091869 | ICM | G11B007-24 |
| | | ICS | G11B007-24 |
| | | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7] |
| AB | The invention relates to a phase change type optical disk including two recording layers, wherein the recording layer includes a Bi-contg. crystn. acceleration layer and shows the metastable Sb ₃ Te phase of the space group Fm3m. The optical disk can be initialized by a first initialization step. | | |
| ST | multilayer phase change optical disk crystn acceleration layer initialization | | |
| IT | Erasable optical disks (multilayer phase change type information recording medium) | | |
| IT | 1304-82-1, Bismuth telluride 7440-69-9, Bismuth, processes 11149-21-6 12666-03-4 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses) (crystn. accelerator layer of multilayer phase change type optical disk) | | |
| IT | 384829-16-7 | 384829-18-9 | 384829-19-0 ***384829-22-5*** 384829-26-9 384829-32-7 384829-33-8 384829-35-0 384829-38-3 384829-40-7 384829-41-8 384829-43-0 384829-44-1 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses) (recording layer of multilayer phase change type optical disk) |

L7 ANSWER 22 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:240222 CAPLUS
DN 138:262761
ED Entered STN: 28 Mar 2003
TI Phase changeable optical recording material with silver reflection layer
IN Yamada, Katsuyuki; Narumi, Shinya
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24; B41M005-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2003091867 | A2 | 20030328 | JP 2001-283993 | 20010918 |
| PRAI | JP 2001-283993 | | 20010918 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|--|-------|---|
| | JP 2003091867 | ICM | G11B007-24 |
| | | ICS | G11B007-24; B41M005-26 |
| | | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |
| AB | The material, comprising a substrate successively coated with an under protective layer, an optical recording layer, an upper protective layer with thickness D(TL), and a reflection layer comprising Ag (purity .gtoreq.99%) with thickness D(Ag), satisfies that (1) 5 .times. D(TL) .ltoreq. D(Ag) .ltoreq. 15 .times. D(TL), (2) the main component of the recording layer comprises an alloy A.alpha.B.beta.Sb.gamma.Te.delta. (A = Ag and/or Ge; B = In and/or Ga and/or Bi; .alpha., .beta., .gamma., .delta. = at. %) satisfying 0.001 .ltoreq. .alpha./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.05, 0.01 .ltoreq. .beta./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.10, 0.65 .ltoreq. .gamma./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.85, 0.10 .ltoreq. .delta./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.27, .beta./alpha. .gtoreq.1, and (3) upper | | |

limit of recrystn. linear velocity of the recording layer (V) is 7-12 m/s.
 In the material, V may be 14-21 m/s. The material shows good storage
 stability and is suited for high multi-speed recording.

ST phase change optical recording material; silver reflection layer optical
 recording material; antimony tellurium silver germanium indium gallium
 bismuth

IT Optical recording materials
 (phase changeable optical recording material with silver reflection
 layer)

IT Optical ROM disks
 (rewritable; phase changeable optical recording material with silver
 reflection layer)

IT 7440-22-4, Silver, uses
 RL: DEV (Device component use); USES (Uses)
 (phase changeable optical recording material with high purity silver
 reflection layer)

IT ***502454-85-5*** 502454-86-6
 RL: DEV (Device component use); USES (Uses)
 (recording layer; phase changeable optical recording material with high
 purity silver reflection layer)

L7 ANSWER 23 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:152466 CAPLUS
 DN 138:178306
 ED Entered STN: 28 Feb 2003
 TI Rewritable optical recording material with dielectric protective layer
 containing zirconia
 IN Onagi, Nobuaki; Miura, Hiroshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-24
 ICS G11B007-24; B41M005-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 2003059101 | A2 | 20030228 | JP 2001-241170 | 20010808 |
| PRAI | JP 2001-241170 | | 20010808 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| ----- | ---- | ----- |
| JP 2003059101 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |

AB The material, comprising a support successively coated with a reflection
 radiation layer, an under dielec. protective layer, a phase-change
 recording layer, an upper dielec. protective layer, and a resin protective
 layer, is characterized by that the under and/or upper dielec. protective
 layers essentially contain partially stabilized zirconia essentially
 contg. ZrO2 and added with SiO2. As the protective layer shows toughness
 and mech. strength, the material shows high sensitivity and re-writable
 many times.

ST optical recording material protective layer zirconia; zirconia silica
 yttria dielec protective layer

IT Optical disks
 (phase-change; rewritable optical recording material with dielec.
 protective layer contg. zirconia)

IT ***406496-61-5*** , Antimony 68, germanium 2, indium 5, silver 1,
 tellurium 24 (atomic) ***484058-50-6*** , Antimony 70, germanium 3,
 indium 3, silver 1, tellurium 23 (atomic) 497232-20-9, Antimony 70,
 germanium 3, indium 2, silver 1, tellurium 24 (atomic)
 RL: DEV (Device component use); USES (Uses)
 (recording layer; rewritable optical recording material with dielec.
 protective layer contg. zirconia)

IT 7440-22-4, Silver, uses 12732-52-4, Silver 99, zinc 1 (atomic)
 RL: DEV (Device component use); USES (Uses)

(reflection layer; rewritable optical recording material with dielec.
protective layer contg. zirconia)
IT 497232-15-2, Yttrium zinc zirconium oxide sulfide
(Y0.02Zn0.8Zr0.19O0.41S0.8)
RL: DEV (Device component use); USES (Uses)
(under protective layer; rewritable optical recording material with
dielec. protective layer contg. zirconia)
IT 497232-18-5, Yttrium zirconium oxide silicate (Y0.05Zr0.88O1.62(SiO4)0.1)
497232-22-1, Yttrium zinc zirconium oxide sulfide
(Y0.01Zn0.8Zr0.2O0.4S0.8)
RL: DEV (Device component use); USES (Uses)
(upper protective layer; rewritable optical recording material with
dielec. protective layer contg. zirconia)

L7 ANSWER 24 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:152464 CAPLUS

DN 138:178305

ED Entered STN: 28 Feb 2003

TI Over-writable phase-change optical recording material

IN Nakamura, Yuki; Kato, Masanori

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-0045

ICS B41M005-26; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2003059053 | A2 | 20030228 | JP 2001-252056 | 20010822 |
| PRAI | JP 2001-252056 | | 20010822 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2003059053 | ICM | G11B007-0045 |
| | ICS | B41M005-26; G11B007-24 |
| | IPCI | G11B0007-0045 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7] |

AB The material, directly over-writable .gtoreq.1 time, has lowest recording
linear velocity (L) .gtoreq.3.4 m/s, is characterized by that (1)
information about L and highest recording linear velocity (H) or H/L is
recorded and (2) (a) H/L = 4.0-6.0 or (b) (H - L) = 11-35 m/s. The
material is re-writable, recording and erasing information at linear
velocity .gtoreq.14 m/s, and also shows good recording characteristic at
low linear velocity.

ST phase change optical recording material; linear velocity optical recording
material

IT Erasable optical disks

(over-writable phase-change optical recording material with controlled
linear velocity)

IT Optical recording materials

(rewritable; over-writable phase-change optical recording material with
controlled linear velocity)

IT ***497227-19-7*** , Antimony 74, germanium 2, indium 5, silver 1,
tellurium 18 (atomic)

RL: DEV (Device component use); USES (Uses)

(recording layer; over-writable phase-change optical recording material
with controlled linear velocity)

IT 7440-22-4, Silver, uses

RL: DEV (Device component use); USES (Uses)

(reflection layer; over-writable phase-change optical recording
material with controlled linear velocity)

L7 ANSWER 25 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:56618 CAPLUS

DN 138:98276

ED Entered STN: 24 Jan 2003

TI Optical recording material with sulfur-resistant barrier layer

IN Onagi, Nobuaki; Ito, Kazunori; Yuzuhara, Hajime
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-24
 ICS G11B007-24; G11B007-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | --- | ----- | ----- | ----- |
| PI | JP 2003022570 | A2 | 20030124 | JP 2001-209640 | 20010710 |
| PRAI | JP 2001-209640 | | 20010710 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| ----- | ---- | ----- |
| JP 2003022570 | ICM | G11B007-24 |
| | ICS | G11B007-24; G11B007-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |

AB In the material comprising a support coated with an under dielec. protective layer, a phase-changeable recording layer, an upper dielec. protective layer, a sulfur-resistant barrier layer, and a reflection and heat-radiation layer mainly contg. Ag, the barrier layer mainly contains SiC and AlN. The barrier layer is formed by magneto-electron sputtering using Si-Al as a target and Ar, N, and methane mixed gas as a sputtering gas. The material shows high sensitivity and wide power margin and is useful for CAV recording.

ST optical recording material phase changeable; barrier layer aluminum nitride silicon carbide; magnetoelectron sputtering silicon aluminum target barrier layer; argon nitrogen methane sputtering gas

IT Optical recording materials
 (optical recording material with sulfur-resistant barrier layer contg. SiC and AlN)

IT 7631-86-9, Silicon oxide, uses
 RL: DEV (Device component use); USES (Uses)
 (optical recording material with sulfur-resistant barrier layer contg. SiC and AlN)

IT 409-21-2P, Silicon carbide, preparation 24304-00-5P, Aluminum nitride
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (optical recording material with sulfur-resistant barrier layer contg. SiC and AlN)

IT 1314-98-3, Zinc sulfide, uses
 RL: DEV (Device component use); USES (Uses)
 (protective layer; optical recording material with sulfur-resistant barrier layer contg. SiC and AlN)

IT ***484058-50-6*** , Antimony 70, germanium 3, indium 3, silver 1, tellurium 23 (atomic)
 RL: DEV (Device component use); USES (Uses)
 (recording layer; optical recording material with sulfur-resistant barrier layer contg. SiC and AlN)

IT 7440-22-4, Silver, uses
 RL: DEV (Device component use); USES (Uses)
 (reflection layer; optical recording material with sulfur-resistant barrier layer contg. SiC and AlN)

IT 74-82-8, Methane, uses 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (sputtering gas; sulfur-resistant barrier layer contg. SiC and AlN formed by magneto-electron sputtering)

IT 7429-90-5, Aluminium, uses 7440-21-3, Silicon, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (sputtering target; sulfur-resistant barrier layer contg. SiC and AlN formed by magneto-electron sputtering)

TI Optical information recording medium and information recording method
 using the recording medium
 IN Yamada, Katsuyuki; Narumi, Shinya
 PA Ricoh Company, Ltd., Japan
 SO U.S. Pat. Appl. Publ., 13 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM G11B007-24
 ICS G11B007-26
 INCL 430270130; 369059110; 369275400; 369288000; 430945000; 430275100;
 428064400
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | US 2003008236 | A1 | 20030109 | US 2002-179101 | 20020624 |
| | JP 2003006925 | A2 | 20030110 | JP 2001-193779 | 20010626 |
| | JP 2003006928 | A2 | 20030110 | JP 2001-193780 | 20010626 |
| | EP 1280142 | A1 | 20030129 | EP 2002-254436 | 20020625 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| | CN 1396591 | A | 20030212 | CN 2002-124419 | 20020626 |
| PRAI | JP 2001-193779 | A | 20010626 | | |
| | JP 2001-193780 | A | 20010626 | | |

CLASS
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

 US 2003008236 ICM G11B007-24
 ICS G11B007-26
 INCL 430270130; 369059110; 369275400; 369288000; 430945000;
 430275100; 428064400
 IPCI G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7]
 NCL 430/270.130
 ECLA G11B007/24; G11B007/243; G11B007/258
 JP 2003006925 IPCI G11B0007-24 [ICM,7]
 JP 2003006928 IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]
 EP 1280142 IPCI G11B0007-24 [ICM,7]
 ECLA G11B007/24; G11B007/243; G11B007/258
 CN 1396591 IPCI G11B0007-24 [ICM,7]; G11B0011-00 [ICS,7]
 AB An optical information recording medium includes a substrate, a light
 absorbing layer which is located overlying the substrate and in which
 marks are formed to store information and a light reflection layer located
 overlying the light absorbing layer including a crystal. The optical
 information recording medium satisfies the relationship:
 $Lt/4.Lt_{oreq}.Lc.Lt_{oreq}.L_m$, (L_c = the av. particle diam. of the crystal of
 the light reflection layer; L_m = min. length of the marks; L_t = thickness
 of the light reflection layer).
 ST optical information recording reflective protective absorbing layer
 IT Optical recording materials
 (erasable; optical information recording medium and method)
 IT Polycarbonates, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (substrate; optical information recording medium and method contg.)
 IT 483348-34-1 ***483348-35-2*** 483348-36-3
 RL: DEV (Device component use); USES (Uses)
 (light absorbing layer; optical information recording medium and method
 contg.)
 IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses
 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-02-0,
 Nickel, uses 7440-05-3, Palladium, uses 7440-36-0, Antimony, uses
 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses
 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses
 RL: DEV (Device component use); USES (Uses)
 (light reflection layer; optical information recording medium and
 method contg.)
 IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses
 7631-86-9, Silica, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (protective layer; optical information recording medium and method
 contg.)

L7 ANSWER 27 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:976130 CAPLUS
DN 138:47391
ED Entered STN: 27 Dec 2002
TI Optical recording medium having protective layer with controlled refractive index and thickness
IN Onagi, Nobuaki; Ito, Kazunori; Yuzuhara, Hajime
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24; B41M005-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002373452 | A2 | 20021226 | JP 2001-179950 | 20010614 |
| PRAI | JP 2001-179950 | | 20010614 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002373452 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |

AB The optical recording medium has a substrate, a 1st protective layer, a phase-change recording layer, a 2nd protective layer, and a reflective heat-radiating layer, and the 1st protective layer shows refractive index to wavelength for readout .ltoreq.1.8 and has thickness 50-75 nm. Preferably the phase-change recording layer mainly comprises Sb and Te and contains Ge, In, and/or Ag and the 2nd protective layer has thickness .ltoreq.19 nm. A transparent protective film may be formed between the reflective heat-radiating layer and the 2nd protective layer usually made of ZnS-SiO2 when Ag alloy is used as the heat-radiating layer to prevent degrdn. of Ag alloy upon sulfidation. The medium shows good overwrite characteristics.

ST erasable phase change optical disk protective layer; silver alloy reflective heat radiating layer optical disk

IT Erasable optical disks
(optical recording medium having protective layer with controlled refractive index and thickness)

IT Silver alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(reflective heat-radiating layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ZnS-SiO2 protective layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT ***478920-46-6*** ***478920-47-7***
RL: TEM (Technical or engineered material use); USES (Uses)
(phase-change recording layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT 11122-18-2, Aluminum 98, copper 2 (atomic) 203397-04-0, Copper 2, silver 98 (atomic)
RL: TEM (Technical or engineered material use); USES (Uses)
(reflective heat-radiating layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT 409-21-2, Silicon carbide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(transparent protective film; optical recording medium having protective layer with controlled refractive index and thickness)

L7 ANSWER 28 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:921304 CAPLUS
DN 138:18111
ED Entered STN: 04 Dec 2002
TI Sputtering target and optical recording medium obtained by using it

IN Suzuki, Eiko; Kageyama, Yoshiyuki; Harigai, Masato; Tashiro, Hiroko;
 PA Miura, Hiroshi; Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki
 SO Ricoh Co., Ltd., Japan
 Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B41M005-26
 ICS G11B007-006; G11B007-24; G11B007-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 56

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 2002347349 | A2 | 20021204 | JP 2001-164792 | 20010531 |
| PRAI | JP 2001-79830 | A | 20010321 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| ----- | ---- | ----- |
| JP 2002347349 | ICM | B41M005-26 |
| | ICS | G11B007-006; G11B007-24; G11B007-26 |
| | IPCI | B41M0005-26 [ICM,7]; G11B0007-006 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |

AB The target has a compn. .gtoreq.0.9 (at. ratio) of which is represented by X.alpha.Sb.beta.Te.gamma. (X = In and/or Ga; .alpha. = 0.01-0.1; .beta. = 0.60-0.90; .gamma. = 1 - .alpha. - .beta.). Optical recording medium having a recording layer obtained by using the target is also claimed. When laser beam with intensity 8-15 times reprodn. power is irradiated to the rotating recording medium, the recording layer is in crystal state at rotational linear velocity .ltoreq.7 m/s (or .ltoreq.16 m/s) and starts to become amorphous at 7-16 m/s (or 16-20 m/s). The recording medium is suitable for high linear velocity recording and has high capacity (equal to or higher than DVD-ROM), storage stability, and excellent overwrite performance.

ST sputtering target optical recording medium linear velocity; gallium antimony tellurium sputtering target optical recording; indium antimony tellurium alloy sputtering target optical recording

IT Optical disks
 Optical recording materials
 Sputtering targets
 (sputtering target for recording layer of optical recording medium for high linear velocity recording and storage stability)

IT 405114-43-4, Antimony 70, gallium 6, tellurium 24 (atomic) 405114-44-5, Antimony 70, gallium 6, silver 3, tellurium 21 (atomic) 405114-45-6, Antimony 70, gallium 6, germanium 3, tellurium 21 (atomic) 405114-46-7, Antimony 70, gallium 6, germanium 3, silver 1, tellurium 20 (atomic) 477572-04-6, Antimony 66, gallium 5, tellurium 29 (atomic) 477572-05-7, Antimony 65, gallium 5, germanium 3, tellurium 27 (atomic) 477572-06-8, Antimony 64, gallium 5, germanium 3, silver 2, tellurium 26 (atomic) ***477572-07-9*** 477572-08-0, Antimony 78, gallium 5, tellurium 17 (atomic) 477572-09-1, Antimony 77, gallium 5, germanium 3, tellurium 15 (atomic) 477572-10-4, Antimony 76, gallium 5, germanium 3, silver 2, tellurium 14 (atomic) ***477572-11-5*** , Antimony 82, germanium 3, indium 5, silver 2, tellurium 8 (atomic)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (sputtering target for recording layer of optical recording medium for high linear velocity recording and storage stability)

L7 ANSWER 29 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:833367 CAPLUS
 DN 137:343941
 ED Entered STN: 01 Nov 2002
 TI Phase-change optical recording medium and disk comprising crystallization accelerating layer
 IN Hanaoka, Katsunari; Shibata, Kiyoto; Shinkai, Masaru; Aman, Yasumoto;
 Miura, Hiroshi; Harigaya, Mokoto
 PA Japan
 SO U.S. Pat. Appl. Publ., 23 pp.
 CODEN: USXXCO
 DT Patent
 LA English

IC ICM G11B007-24
 INCL 430270130
 CC * 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | US 2002160306 | A1 | 20021031 | US 2002-62885 | 20020131 |
| | JP 2003157570 | A2 | 20030530 | JP 2001-319887 | 20011017 |
| PRAI | JP 2001-24105 | A | 20010131 | | |
| | JP 2001-28496 | A | 20010205 | | |
| | JP 2001-273406 | A | 20010910 | | |
| | JP 2001-319887 | A | 20011017 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|--|---------------|-------|--|
| | ----- | ---- | ----- |
| | US 2002160306 | ICM | G11B007-24 |
| | | INCL | 430270130 |
| | | IPCI | G11B0007-24 [ICM,7] |
| | | NCL | 430/270.130 |
| | | ECLA | G11B007/0045P; G11B007/243 |
| | JP 2003157570 | IPCI | G11B0007-24 [ICM,7]; G11B0007-0045 [ICS,7] |

AB A phase-change recording medium comprising Sb3Te compds. which are formed by initialization-less process steps is provided through the formation of recording media having layered structure including suitably selected materials together with methods for fabricating such recording media, thereby leading to DVD-ROM compatible recording media capable of achieving recording d. of 2.6 GB or more on a disk of 120 mm in diam. The recording medium includes an Sb3Te recording layer and a crystn. accelerating layer formed contiguously with the recording layer. The crystn. accelerating layer is formed to suitably include impurities as record stabilization agents. At least one addnl. impurity layer may be formed contiguous to said recording and/or crystn. accelerating layer. During recording steps accompanying phase transformation, the impurities in the crystn. accelerating layer diffuse into the recording layer resulting in a higher impurity content in the recording layer than that immediately after the layer formation.

ST phase change optical recording disk crystn accelerating layer DVDROM; stabilization impurity phase change optical recording disk DVDROM

IT Optical disks

Optical recording materials

(phase-change; phase-change optical recording medium and disk comprising crystn. accelerating layer and impurity layer)

IT 7440-69-9P, Bismuth, preparation 124849-27-0P, Bismuth 50, germanium 50 (atomic) 126185-51-1P 372947-00-7P 474010-87-2P 474010-91-8P, Bismuth 42, germanium 58 (atomic) 474010-96-3P, Bismuth 40, germanium 60 (atomic) 474011-01-3P 474011-06-8P 474011-13-7P 474012-43-6P 474012-46-9P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(crystn. accelerating layer; phase-change optical recording medium and disk comprising crystn. accelerating layer)

IT 129891-96-9P, Gallium 30, indium 70 (atomic) 474012-60-7P 474012-63-0P 474012-66-3P 474012-71-0P 474012-74-3P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(impurity layer; phase-change optical recording medium and disk comprising crystn. accelerating layer and impurity layer)

IT 474011-48-8 474011-51-3 474011-56-8 474011-59-1 474011-62-6 474011-66-0 474011-69-3 474011-75-1 474011-80-8 474011-84-2 474011-89-7 474011-92-2 474012-00-5 474012-09-4 474012-13-0 474012-16-3 474012-20-9 474012-24-3 474012-29-8 474012-36-7

RL: FMU (Formation, unclassified); TEM (Technical or engineered material use); FORM (Formation, nonpreparative); USES (Uses)

(intermediate layer; phase-change optical recording medium and disk comprising crystn. accelerating layer in relation to intermediate layer compn. formed after irradiation.)

IT 474012-77-6 474012-80-1 474012-82-3 474012-85-6 ***474012-89-0*** 474012-92-5 474012-95-8

RL: FMU (Formation, unclassified); TEM (Technical or engineered material use); FORM (Formation, nonpreparative); USES (Uses)

(phase-change optical recording medium and disk comprising crystn.

accelerating layer and impurity layer in relation to layer compn. after recording)
IT 124307-63-7P, Antimony 80, tellurium 20 (atomic) 212206-00-3P
470715-74-3P 470715-78-7P 474011-26-2P 474011-29-5P 474011-33-1P
474011-38-6P 474011-43-3P 474012-56-1P 474012-57-2P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(recording layer; phase-change optical recording medium and disk comprising crystn. accelerating layer)

L7 ANSWER 30 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:714346 CAPLUS

DN 137:270664

ED Entered STN: 20 Sep 2002

TI Phase-change optical recording media having crystallization accelerating layer and/or recording layer formed with sputtering gas containing helium and method for manufacture thereof

IN Shibata, Kiyoto; Shinkai, Masaru; Aman, Yasutomo; Hanaoka, Katsushige; Miura, Hiroshi

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26

ICS B41M005-26; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 42

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002269859 | A2 | 20020920 | JP 2001-70611 | 20010313 |
| PRAI | JP 2001-70611 | | 20010313 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002269859 | ICM | G11B007-26 |
| | ICS | B41M005-26; G11B007-24 |
| | IPCI | G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7] |

AB The title phase-change optical recording medium has a recording layer, a dielec. layer, a reflective heat-radiating layer, and a crystn. accelerating layer, which is disposed next to the recording layer on a substrate, wherein the crystn. accelerating layer and/or the recording layer are formed by sputtering using sputtering gas contg. He. The optical recording medium provides the thin crystn. accelerating layer with the improved crystn. acceleration.

ST phase optical recording media crystn accelerating layer manuf

IT Optical disks

Optical recording materials

Sputtering

(phase-change optical recording media and method for manuf. thereof)

IT 7440-69-9P, Bismuth, processes 12714-59-9P, Antimony 20, bismuth 80 (atomic)

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)

(crystn. accelerating layer of optical recording media)

IT 124307-63-7P, Antimony 79.5, tellurium 20.5 (atomic) ***461669-03-4P***
461669-04-5P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)

(recording layer of optical recording media)

IT 7440-37-1, Argon, processes 7440-59-7, Helium, processes

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)

(sputtering gas for forming crystn. accelerating layer and/or recording layer of optical recording media)

L7 ANSWER 31 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:714344 CAPLUS
 DN 137:255444
 ED Entered STN: 20 Sep 2002
 TI Sputtering target for manufacturing recording layer of phase-change optical recording media
 IN Suzuki, Eiko; Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi; Yuzuhara, Hajime; Onagi, Nobuaki; Tashiro, Hiroko; Tani, Katsuhiko; Iwata, Kaneyuki
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-26
 ICS B41M005-26; C23C014-34; G11B007-24
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 42

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002269857 | A2 | 20020920 | JP 2001-66510 | 20010309 |
| PRAI | JP 2001-66510 | | 20010309 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002269857 | ICM | G11B007-26 |
| | ICS | B41M005-26; C23C014-34; G11B007-24 |
| | IPCI | G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; C23C0014-34 [ICS,7]; G11B0007-24 [ICS,7] |

AB The title sputtering target contains mainly chalcogen and an additive forming NaCl structure crystals with the chalcogen. The sputtering target provides phase-change optical recording media of high d., stable repeated recording characteristics, and good storageability.

ST sputtering target manufg recording layer phase optical media

IT Optical disks

Sputtering

(sputtering target for manufg. optical recording media)

IT Optical recording materials

(sputtering target for manufg. recording layer of phase-change optical recording media)

IT ***461463-00-3***

RL: TEM (Technical or engineered material use); USES (Uses)
 (sputtering target for manufg. optical Ge recording media)

IT 213685-67-7 461462-87-3 461462-88-4 461462-89-5 461462-90-8

461462-91-9 461462-92-0 461462-93-1 461462-94-2 461462-95-3

461462-96-4 ***461462-97-5*** 461462-98-6

461462-99-7 ***461463-01-4*** ***461463-02-5***

461463-03-6 ***461463-04-7*** ***461463-05-8***

RL: TEM (Technical or engineered material use); USES (Uses)

(sputtering target for manufg. optical recording media)

L7 ANSWER 32 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:714332 CAPLUS

DN 137:255435

ED Entered STN: 20 Sep 2002

TI Optical recording medium

IN Yuzuhara, Hajime; Onagi, Nobuaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002269824 | A2 | 20020920 | JP 2001-67639 | 20010309 |
| PRAI | JP 2001-67639 | | 20010309 | | |

CLASS
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

JP 2002269824 ICM G11B007-24
ICS G11B007-24
IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]
AB The invention relates to an optical recording medium, such as a phase-change rewritable optical disk, comprising a protective dielec. layer, a recording layer, a upper protective layer, and a reflecting heat-dissipating layer, fabricated in that order on a light-incident transparent substrate, wherein the SiC-based material having the thermal cond. less than that of ZnS.cntdot.SiO2 mixt. is utilized as the upper protective layer for improving the high-speed overwrite cyclability.
ST optical disk rewritable silicon carbide protective film
IT Optical disks
(rewritable; optical recording medium)
IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(substrate; optical recording medium)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(lower protective layer; optical recording medium)
IT 443284-25-1 ***443284-26-2*** ***443284-27-3*** 443284-28-4
RL: DEV (Device component use); USES (Uses)
(recording layer; optical recording medium)
IT 138928-32-2
RL: DEV (Device component use); USES (Uses)
(reflective layer; optical recording medium)
IT 409-21-2, Silicon carbide, uses 12069-94-2, Niobium carbide
12070-06-3, Tantalum carbide 12070-08-5, Titanium carbide 12070-14-3,
Zirconium carbide
RL: DEV (Device component use); USES (Uses)
(upper protective layer; optical recording medium)

L7 ANSWER 33 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:714331 CAPLUS
DN 137:255434
ED Entered STN: 20 Sep 2002
TI Phase-change optical disk and its production method
IN Shinkai, Masaru; Onagi, Nobuaki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24; G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI JP 2002269823 A2 20020920 JP 2001-67620 20010309
PRAI JP 2001-67620 20010309

CLASS
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

JP 2002269823 ICM G11B007-24
ICS G11B007-24; G11B007-26
IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
AB The invention relates to a phase-change optical disk, such as a rewritable optical disk, comprising a 1st dielec. layer, a recording layer, a 2nd dielec. layer, and a reflective layer, fabricated in that order on a transparent substrate, wherein one of the dielec. layers is made of the mixt. of ZnS and SiC for prepg. the dielec. layer with appropriate thermal cond. Also claimed is the prodn. method of the optical disk by sputtering techniques.
ST optical disk rewritable zinc sulfide silicon carbide dielec layer
IT Sputtering
(in fabrication of rewritable optical disk)
IT Optical disks

(rewritable; phase-change optical disk)

IT Polycarbonates, uses
 RL: DEV (Device component use); USES (Uses)
 (substrate; phase-change optical disk)

IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses
 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (dielec. layer; phase-change optical disk)

IT ***404003-64-1***
 RL: DEV (Device component use); USES (Uses)
 (recording layer; phase-change optical disk)

L7 ANSWER 34 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:714328 CAPLUS
 DN 137:255433
 ED Entered STN: 20 Sep 2002
 TI Phase-change optical disk
 IN Shinozuka, Michiaki
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-24
 ICS G11B007-24; B41M005-26; C03C003-32; C23C014-06
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002269815 | A2 | 20020920 | JP 2001-74122 | 20010315 |
| PRAI | JP 2001-74122 | | 20010315 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002269815 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26; C03C003-32; C23C014-06 |
| | IPC | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; C03C0003-32 [ICS,7]; C23C0014-06 [ICS,7] |

AB The invention relates to a phase-change optical disk capable of high d.
 recording, comprising a 1st recording layer, and a 2nd recording layer
 formed on the light-incident substrate, wherein the 1st recording layer is
 made of the chalcogenide glass contg. Sb and Te for improving the
 recording sensitivity.

ST optical disk phase change chalcogenide glass antimony tellurium

IT Optical disks
 (phase-change optical disk)

IT Chalcogenide glasses
 Polycarbonates, uses
 RL: DEV (Device component use); USES (Uses)
 (substrate; phase-change optical disk)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (protective layer; phase-change optical disk)

IT 52896-61-4 461463-57-0 461463-58-1 ***461463-59-2*** 461463-60-5
 461463-61-6 461463-62-7 461463-63-8 461463-64-9 461463-65-0
 461463-66-1
 RL: DEV (Device component use); USES (Uses)
 (recording layer; phase-change optical disk)

L7 ANSWER 35 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:714320 CAPLUS
 DN 137:270656
 ED Entered STN: 20 Sep 2002
 TI Phase change-type optical recording medium and optical recording method
 IN Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-0045

ICS B41M005-26; G11B007-24
CC, 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002269742 | A2 | 20020920 | JP 2001-62358 | 20010306 |
| PRAI | JP 2001-62358 | | 20010306 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002269742 | ICM | G11B007-0045 |
| | ICS | B41M005-26; G11B007-24 |
| | IPCI | G11B0007-0045 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7] |

AB The phase change-type optical recording medium comprises a 1st dielec. protective layer, an AlInSbTeGe (A = Ag and/or Ga) phase change recording layer, a 2nd dielec. protective layer, a SiC layer, and a metal reflection layer in the order formed on a translucent substrate, wherein the 1st and 2nd dielec. protective layers is made of a mixt of ZnS and SiO2 and the metal reflection layer is made of Ag or an alloy thereof. Also claimed is the optical recording method which uses a recording pulse train consisting of multiple on-pulses and off-pulses and makes a const. angular velocity (CAV) possible.

ST phase change optical recording const angular velocity

IT Optical recording

(by recording pulse train consisting of multiple on-pulses and off-pulses)

IT Optical recording materials

(phase change-type optical recording material having AlInSbTeGe phase change recording layer)

IT Silver alloy, base

RL: DEV (Device component use); USES (Uses)

(phase change-type optical recording material from)

IT ***384829-20-3***, Antimony 68.5, germanium 2, indium 5, silver 0.5, tellurium 24 (atomic) ***461668-38-2***, Antimony 71, germanium 0.5, indium 5, silver 0.5, tellurium 23 (atomic)

RL: DEV (Device component use); USES (Uses)

(phase change-type optical recording layer)

IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses 7440-22-4, Silver, uses 7631-86-9, Silica, uses 461668-39-3, Antimony 72, gallium 1, germanium 2, indium 3, tellurium 22 (atomic)

RL: DEV (Device component use); USES (Uses)

(phase change-type optical recording material from)

L7 ANSWER 36 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:708687 CAPLUS

DN 137:239812

ED Entered STN: 18 Sep 2002

TI Phase-change-type erasable optical recording media with low jitter and their manufacture

IN Shibata, Kiyoto; Shinkai, Masaru; Aman, Yasutomo; Miura, Hiroshi; Hanaoka, Katsushige

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-24; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 56

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002264510 | A2 | 20020918 | JP 2001-66112 | 20010309 |
| PRAI | JP 2001-66112 | | 20010309 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2002264510 | ICM | B41M005-26 |

ICS G11B007-24; G11B007-26
IPCI B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26
[ICS,7]

AB The optical recording medium is characterized in that the recording layer is crystd. after deposition and shows relative reflection (ratio of reflection for non-recorded state to that for recorded state) >90%. The recording layer preferably contains semistable Sb₃Te phase in the Fm3m space group. The recording media do not require initializing processes.

ST erasable optical recording medium jitter redn; phase change optical disk
cryst recording layer

IT Optical memory devices
(erasable; phase-change-type erasable optical recording media with low jitter)

IT 1304-82-1, Bismuth telluride (Bi₂Te₃) 7440-69-9, Bismuth, uses 12714-59-9, Antimony 20, bismuth 80 (atomic)
RL: TEM (Technical or engineered material use); USES (Uses)
(crystn. acceleration layer; phase-change-type erasable optical recording media with low jitter)

IT 109195-73-5, Germanium 30, tellurium 70 (atomic) 116456-64-5, Aluminum 60, germanium 40 (atomic) 459862-18-1, Germanium 20, indium 80 (atomic)
RL: TEM (Technical or engineered material use); USES (Uses)
(impurity layer; phase-change-type erasable optical recording media with low jitter)

IT 124307-63-7, Antimony 80, tellurium 20 (atomic) 128522-63-4, Antimony 75, tellurium 25 (atomic) 250296-03-8, Antimony 74, tellurium 26 (atomic) ***459862-11-4*** 459862-14-7, Antimony 72, germanium 6, tellurium 22 (atomic) ***459862-16-9***
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; phase-change-type erasable optical recording media with low jitter)

IT 384829-45-2, Antimony telluride (Sb₃Te)
RL: TEM (Technical or engineered material use); USES (Uses)
(semistable phase, recording layer; phase-change-type erasable optical recording media with low jitter)

L7 ANSWER 37 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:693294 CAPLUS
DN 137:239805
ED Entered STN: 13 Sep 2002
TI High-density erasable optical recording media for high-speed recording
IN Yuzuhara, Hajime; Itô, Kazunori; Konagi, Nobuaki; Shinkai, Masaru
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

IC ICM G11B007-24
ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 57

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002260281 | A2 | 20020913 | JP 2001-54778 | 20010228 |
| | US 2003003395 | A1 | 20030102 | US 2002-85692 | 20020227 |
| | US 6846611 | B2 | 20050125 | | |
| PRAI | JP 2001-54778 | A | 20010228 | | |
| | JP 2001-59441 | A | 20010305 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002260281 | ICM | G11B007-24 |
| | ICS | G11B007-24 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7] |
| US 2003003395 | IPCI | G11B0007-24 [ICM,7] |
| | IPCR | G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258 [I,A] |
| | NCL | 430/270.130 |
| | ECLA | G11B007/243; G11B007/254; G11B007/257; G11B007/258 |

AB The optical recording medium, DVD, optical files, etc., comprises a transparent substrate, a lower dielec. protective layer, a phase-change

recording layer, an upper dielec. protective layer, and a reflective heat-radiation layer, wherein the upper dielec. protective layer comprises a mixt. of ZrO₂ and SiO₂ with a molar compn. of (ZrO₂)_{100-x}(SiO₂)_x (0 < x < 60; mol%). The upper protective layer may further contain ZnS. The optical media show good resistance to quick cycle of cooling and heating in recording.

ST erasable optical disk high speed recording; zirconia silica protective layer optical recording

IT Erasable optical disks
(high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT 409-21-2, Silicon carbide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(2nd dielec. protective layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT ***458568-87-1*** 458568-88-2 ***458568-89-3*** 458568-90-6
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT 7440-22-4, Silver, uses 12659-64-2
RL: TEM (Technical or engineered material use); USES (Uses)
(reflective layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT 1314-23-4, Zirconia, uses 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 174633-44-4, Silicon zirconium oxide 458568-86-0, Zinc zirconium oxide silicate sulfide (Zn_{0.65}Zr_{0.35}O_{0.5}(SiO₄)_{0.1}SO_{0.65})
RL: TEM (Technical or engineered material use); USES (Uses)
(upper dielec. protective layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

L7 ANSWER 38 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:673106 CAPLUS

DN 137:224197

ED Entered STN: 06 Sep 2002

TI Optical information recording disk with improved physical properties and excellent recording properties and its manufacture

IN Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki; Narumi, Shinya; Yamada, Katsuyuki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26
ICS G11B007-0055; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002251792 | A2 | 20020906 | JP 2001-51267 | 20010226 |
| PRAI | JP 2001-51267 | | 20010226 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002251792 | ICM | G11B007-26 |
| | ICS | G11B007-0055; G11B007-24 |
| | IPCI | G11B0007-26 [ICM,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7] |

AB The invention relates to an optical disk comprised of a first transparent substrate, a lower dielec. protective layer, a phase change type recording layer, an upper dielec. protective layer, an upper second protective layer, a silver layer, and a second transparent substrate attached via org. adhesives, wherein the disk is irradiated by 5.0-15.0 mW/.mu.m² laser for initialization. The second protective layer is made up of SiC and the recording layer is made up of Ag, Ge, In, Sb, and Te.

ST optical information phase change recording disk manuf initialization process

IT Erasable optical disks
(optical information recording disk with improved phys. properties and excellent recording properties and its manuf.)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)
 (dielec. layer; optical information recording disk with improved phys.
 properties and excellent recording properties)
 IT 7440-22-4, Silver, uses
 RL: DEV (Device component use); USES (Uses)
 (metal layer; optical information recording disk with improved phys.
 properties and excellent recording properties)
 IT ***443284-26-2*** , Antimony 70, germanium 2, indium 4, silver 1,
 tellurium 23 (atomic)
 RL: DEV (Device component use); USES (Uses)
 (phase change recording layer; optical information recording disk with
 improved phys. properties and excellent recording properties)
 IT 409-21-2, Silicon carbide, uses
 RL: DEV (Device component use); USES (Uses)
 (protective layer; optical information recording disk with improved
 phys. properties and excellent recording properties)

L7 ANSWER 39 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:656247 CAPLUS
 DN 137:192821
 ED Entered STN: 30 Aug 2002
 TI Phase change-type optical recording medium based on antimony and tellurium
 IN Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi; Yuzuhara, Hajime;
 Suzuki, Eiko; Onagi, Nobuaki; Tashiro, Hiroko
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 IC ICM G11B007-24
 ICS G11B007-24; B41M005-26; G11B007-0045
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------|------|----------|-----------------|----------|
| JP 2002245663 | A2 | 20020830 | JP 2001-41010 | 20010216 |
| PRAI JP 2001-41010 | | 20010216 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002245663 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26; G11B007-0045 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7] |

AB The phase change-type optical recording medium has a phase change-type
 recording layer represented $XaSb_xTe_y$ ($a.ltoeq.0.15$; and $0.50.ltoeq.(x+y).ltoeq.0.90$; $X = Ag, Cu, Au, Zn, B, Al, Ga, In, Si, Ge, Sn, Pb, N, Bi, La, Ce, Cd, and/or Tb$) and changes the cryst. phase to the amorphous phase
 upon receiving a laser beam, wherein a reflectivity transition from high
 level to low level by a CW laser irradsn. is 8-30 m/s and a recording
 linear speed is 1.2-30 m/s. The use of addnl. elements other than Sb and
 Te in the recording layer made high-d. recording possible.

ST antimony telluride optical recording disk
 IT Telluride glasses
 RL: DEV (Device component use); USES (Uses)
 (antimony telluride; phase change-type optical recording medium based
 on antimony and tellurium)
 IT Optical disks
 (phase change-type optical recording medium based on antimony and
 tellurium)
 IT 451503-73-4 ***451503-74-5***
 RL: DEV (Device component use); USES (Uses)
 (phase change-type optical recording medium based on antimony and
 tellurium)

IT 7429-90-5, Aluminum, uses 7439-91-0, Lanthanum, uses 7439-92-1, Lead,
 uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-27-9,
 Terbium, uses 7440-31-5, Tin, uses 7440-42-8, Boron, uses 7440-43-9,
 Cadmium, uses 7440-45-1, Cerium, uses 7440-50-8, Copper, uses
 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-57-5, Gold,
 uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7440-74-6,
 Indium, uses 7727-37-9, Nitrogen, uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (phase change-type optical recording medium based on antimony and tellurium)

IT 7440-36-0, Antimony, uses
 RL: DEV (Device component use); USES (Uses)
 (telluride glass; phase change-type optical recording medium based on antimony and tellurium)

L7 ANSWER 40 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:636890 CAPLUS
 DN 137:192812
 ED Entered STN: 23 Aug 2002
 TI Rewritable optical recording material having having AgInSbTe-based recording layer and ZnO-based protective layer
 IN Onagi, Nobuaki; Tashiro, Hiroko; Harigai, Masato; Yuzuhara, Hajime; Ito, Kazunori
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-24
 ICS G11B007-24; B41M005-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 42, 56
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------|------|----------|-----------------|----------|
| JP 2002237095 | A2 | 20020823 | JP 2001-31499 | 20010207 |
| PRAI JP 2001-31499 | | 20010207 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002237095 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |

AB The rewritable optical recoring material comprises a translucent substrate, a lower dielec. protective layer, a phase change-type recording layer, an upper dielec. protective layer, and a reflective heat-release layer, wherein the phase change-type recording layer is a melt erasing-type recording layer based on a AgInSbTe compn. and the upper dielec. protective layer is based on ZnO. The recording layer is sandwiched by the 2 dielec. protective layers having film thicknesses .ltoreq.25 nm. The upper dielec. protective layer contains oxides and nitrides, in addn. to ZnO .gtoreq.50%, but is free of Si-based substances. The rewritable optical recording material was able to increase a recording line speed without changing the compn. of the recording layer.

ST rewritable optical recoring material zinc oxide protective layer; antimony germanium indium silver tellurium optical recording layer

IT Coating materials
 Optical recording materials
 (Rewritable optical recoring material having AgInSbTe-based recording layer and ZnO-based protective layer)

IT 1314-13-2, Zinc oxide, uses 1344-28-1, Alumina, uses ***449762-51-0***
 449762-52-1
 RL: DEV (Device component use); USES (Uses)
 (Rewritable optical recoring material having AgInSbTe-based recording layer and ZnO-based protective layer)

L7 ANSWER 41 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:636886 CAPLUS
 DN 137:192811
 ED Entered STN: 23 Aug 2002
 TI Rewritable optical recording media and method for recording thereon
 IN Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi; Yuzuhara, Hajime; Suzuki, Eiko; Onagi, Nobuaki; Tashiro, Hiroko
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent

LA Japanese
IC ICM G11B007-24
ICS G11B007-24; B41M005-26; G11B007-0045
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002237088 | A2 | 20020823 | JP 2001-34043 | 20010209 |
| PRAI | JP 2001-34043 | | 20010209 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002237088 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26; G11B007-0045 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7] |

AB The title recording media has a first dielec. layer, a phase-change layer, a second dielec. layer, and a metal reflective layer on a transparent substrate, wherein the first and second dielec. layers are made of a mixt. of ZnS and SiO₂ and wherein the phase change layer is made of AgInSbTe (0<a.ltoreq.0.01; 0.03.ltoreq.b.ltoreq.0.10; 0.40.ltoreq.d.ltoreq.0.70; a+b+c+d =1; 0.60.ltoreq.r.ltoreq.0.85) and additive Xe (0.005.ltoreq.e.ltoreq.0.07) and wherein the metal reflective layer is made of Ag or Ag alloy, wherein a third dielec. layer made of material excluding a sulfide compd. is disposed between the second dielec. layer and the metal reflective layer. The medium provides the as much storage capacity as the DVD-ROM and shows the good recording characteristics and the good storageability.

ST rewritable optical recording media

IT Erasable optical disks

Optical recording materials

(rewritable optical recording media and method for recording thereon)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(dielec. layer of rewritable optical recording media)

IT ***406496-61-5*** ***449762-50-9***
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer of rewritable optical recording media)

IT 39325-34-3
RL: TEM (Technical or engineered material use); USES (Uses)
(reflective layer of rewritable optical recording media)

L7 ANSWER 42 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:606227 CAPLUS

DN 137:177178

ED Entered STN: 14 Aug 2002

TI Optical recording media and their manufacture

IN Miura, Hiroshi; Onagi, Nobuaki; Hanaoka, Katsushige

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-24; G11B007-26; G11B007-30

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002225436 | A2 | 20020814 | JP 2001-29811 | 20010206 |
| PRAI | JP 2001-29811 | | 20010206 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002225436 | ICM | B41M005-26 |
| | ICS | G11B007-24; G11B007-26; G11B007-30 |
| | IPCI | B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]; G11B0007-30 [ICS,7] |

AB In the recording media having recording layers of Sb- and Te-contg. phase-change-type recording materials having metastable Sb₃Te phases

(space group Fm3m), crystn.-acceleration layers of high-m.p. Bi compds. are formed at least adjacent to a part of the recording layers. The recording media are manufd. by forming 1st dielec. layers, the crystn.-acceleration layers, and the recording layers on substrates successively. Recording media showing no change in disk characteristics caused by change in compn. of recording layers are obtained without initialization by heat treatment.

ST optical recording medium bismuth crystn acceleration layer; phase change optical recording crystn acceleration layer; antimony tellurium optical disk crystn acceleration layer

IT Erasable optical disks
Optical recording materials
(manuf. of phase change-type optical recording media having Bi compd. crystn.-acceleration layers)

IT 12010-75-2, Bismuth, compd. with zirconium (2:1) 12048-37-2, Bismuth, compd. with zirconium (1:1) 12048-61-2, Bismuth, compd. with zirconium (2:3) 12232-81-4, Bismuth, compd. with cerium (1:1) 12338-02-2, Bismuth, compd. with lithium (1:3) 59125-90-5, Bismuth, compd. with rhodium (1:1)
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of phase change-type optical recording media having Bi compd. crystn.-acceleration layers)

IT 446266-47-3 ***446266-48-4*** 446266-49-5 446266-50-8
446266-51-9
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layers; manuf. of phase change-type optical recording media having Bi compd. crystn.-acceleration layers)

L7 ANSWER 43 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:553452 CAPLUS
DN 137:116998
ED Entered STN: 26 Jul 2002
TI Phase-change optical recording media with excellent high-speed overwriting properties and durability
IN Yuzuhara, Hajime; Deguchi, Hiroshi; Otani, Wataru; Harigai, Masato; Ito, Kazunori; Onagi, Nobuaki; Shibaguchi, Takashi; Tashiro, Hiroko
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24; B41M005-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2002208182 | A2 | 20020726 | JP 2001-2731 | 20010110 |
| PRAI | JP 2001-2731 | | 20010110 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002208182 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26 |
| | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7] |

AB The medium, useful for CD and DVD, consists of a transparent substrate, a dielec. protective layer (A), a recording layer (B), A (optional), a 2nd protective layer (C), and a heat-reflecting layer (D, contg. Ag, Au, or their alloys, preferably) in this order, wherein A comprise a ZnS-SiO2 mixt. and C comprises SiC contg. <15 mol% Al2O3 or AlN or <10 at.% Cr. The medium having D, C, A (optional), B, and A in this order on a transparent substrate is also claimed. The layer B may contain Sb and Te and have a NaCl-type crystal structure.

ST optical recording medium high speed overwriting; silicon carbide protective layer optical disk; rewritable DVD durability zinc sulfide silica

IT Optical recording materials
(erasable; rewritable optical recording media with good durability having ZnS/SiO2 and SiC protective layers)

IT Rocksalt-type crystals

(recording layer; rewritable optical recording media with good durability having ZnS/SiO₂ and SiC protective layers)

IT Erasable optical disks
(rewritable optical recording media with good durability having ZnS/SiO₂ and SiC protective layers)

IT 409-21-2, Silicon carbide, uses 1344-28-1, Aluminum oxide, uses 7440-47-3, Chromium, uses 24304-00-5, Aluminum nitride
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(2nd protective layer; rewritable optical recording media with good durability having ZnS/SiO₂ and SiC protective layers)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silicon dioxide, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(dielec. protective layer; rewritable optical recording media with good durability having ZnS/SiO₂ and SiC protective layers)

IT 443284-25-1 ***443284-26-2*** ***443284-27-3*** 443284-28-4
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(recording layer; rewritable optical recording media with good durability having ZnS/SiO₂ and SiC protective layers)

IT 12735-99-8 58739-36-9 443284-29-5 443284-30-8
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(reflective layer; rewritable optical recording media with good durability having ZnS/SiO₂ and SiC protective layers)

L7 ANSWER 44 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:538188 CAPLUS
DN 137:86015
ED Entered STN: 19 Jul 2002
TI Phase change optical recording medium
IN Nakamura, Yuki; Kato, Masaki
PA Ricoh Company, Japan
SO Eur. Pat. Appl., 30 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 56

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| EP 1223577 | A2 | 20020717 | EP 2002-250177 | 20020110 |
| EP 1223577 | A3 | 20030806 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| JP 2002205459 | A2 | 20020723 | JP 2001-2258 | 20010110 |
| JP 2002208143 | A2 | 20020726 | JP 2001-5734 | 20010112 |
| TW 565835 | B | 20031211 | TW 2002-91100082 | 20020104 |
| US 2003043712 | A1 | 20030306 | US 2002-44490 | 20020109 |
| PRAI JP 2001-2258 | A | 20010110 | | |
| JP 2001-5734 | A | 20010112 | | |
| JP 2001-57392 | A | 20010301 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| EP 1223577 | ICM | G11B007-24 |
| | IPCI | G11B0007-24 [ICM,6] |
| | ECLA | C23C014/06D; C23C014/34B2; G11B007/006S; G11B007/125C2; G11B007/243; G11B007/26V |
| JP 2002205459 | IPCI | B41M0005-26 [ICM,7]; C22C0012-00 [ICS,7]; C22C0021-00 [ICS,7]; C23C0014-34 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |
| JP 2002208143 | IPCI | G11B0007-0055 [ICM,7]; G11B0007-125 [ICS,7]; G11B0007-26 [ICS,7] |
| TW 565835 | IPCI | G11B0007-24 [ICM,7] |
| US 2003043712 | IPCI | G11B0007-125 [ICM,7]; G11B0007-24 [ICS,7] |
| | IPCR | C23C0014-06 [I,A]; C23C0014-06 [I,C]; C23C0014-34 [I,A]; C23C0014-34 [I,C]; G11B0007-00 [I,C]; |

G11B0007-0045 [N,A]; G11B0007-006 [I,A]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-26 [I,A]; G11B0007-26 [I,C]

NCL 369/047.530

ECLA C23C014/06D; C23C014/34B2; G11B007/006S; G11B007/125C2; G11B007/243; G11B007/26V

AB A phase change optical recording medium is disclosed together with the methods for optimally initializing and recording such recording media, feasible for carrying out read/write/erase operations at multiple recording velocities ranging of 4.8-30 m/s. Preferably, a recording layer included in the recording medium essentially consists of Ag, In, Sb and Te, with the proportion in atom % of 0.1 .ltoreq. Ag .ltoreq. 7, 2 .ltoreq. In .ltoreq. 10, 64 .ltoreq. Sb .ltoreq. 92, 5 .ltoreq. Te .ltoreq. 26, and with total .gtoreq. 97%. The method for initializing the recording medium with a scanning beam spot from a high power semiconductor laser is characterized by the energy d. input by the beam spot during one period of through scan is .ltoreq. 1000 J/m², scanning speed of beam spot is in the range of 3.5-6.5 m/s, and the intensity of laser emission .gtoreq. 330 mW. Furthermore, the present method for detg. an optimum recording power includes at least the step of calcg. a normalized gradient g(P), from the equation $g(P) = (m/.DELTA.m)/(P/.DELTA.P)$ (.DELTA.P is an infinitesimal change in the vicinity of recording power P, and .DELTA.m is an infinitesimal change in the vicinity of signal amplitude m).

ST phase change optical recording rewritable disk

IT Optical recording materials
(erasable; phase change optical recording medium)

IT Optical recording materials
Sputtering
(phase change optical recording medium)

IT Telluride glasses
RL: DEV (Device component use); USES (Uses)
(phase change optical recording medium contg.)

IT 7440-36-0, Antimony, uses 7440-56-4, Germanium, uses 7440-74-6, Indium, uses 13494-80-9, Tellurium, uses
RL: DEV (Device component use); USES (Uses)
(Telluride glass; phase change optical recording medium contg.)

IT 374728-59-3P ***374728-66-2P*** 441070-09-3P 441070-10-6P
441070-11-7P 441070-12-8P 441070-13-9P 441070-14-0P
441070-15-1P ***441070-16-2P***
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(recording layer, Telluride glass; phase change optical recording medium contg.)

IT 7440-22-4, Silver, properties 12635-49-3, Aluminum 99.5, Titanium 0.5 (atomic) 39404-72-3, Aluminum 98.5, Silicon 1.5 (atomic) 58338-95-7, Gold 2, Silver 98 (atomic) 99587-36-7 133580-32-2, Palladium 2, Silver 98 (atomic) 153600-12-5 169381-62-8 174284-40-3, Silver 98, titanium 2 (atomic) 196392-07-1 203397-04-0, Copper 2, Silver 98 (atomic) 423171-27-1 441070-17-3 441070-18-4
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(reflective layer; phase change optical recording medium contg.)

IT 441069-99-4 441070-00-4 441070-01-5 441070-02-6 441070-03-7
441070-04-8 441070-05-9 ***441070-06-0*** ***441070-07-1***
441070-08-2
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(sputtering target, Telluride glass; phase change optical recording medium from)

L7 ANSWER 45 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:349323 CAPLUS

DN 136:377545

ED Entered STN: 10 May 2002

TI Phase-change optical recording medium and its initialization

IN Tashiro, Hiroko; Ito, Kazunori; Harigai, Masato; Onagi, Nobuaki; Yuzuhara, Hajime

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24
ICS G11B007-24; B41M005-26; G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002133711 | A2 | 20020510 | JP 2000-329994 | 20001030 |
| PRAI | JP 2000-329994 | | 20001030 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002133711 | ICM | G11B007-24 |
| | ICS | G11B007-24; B41M005-26; G11B007-26 |
| | IPC | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-26 [ICS,7] |

AB The recording medium has a phase-change recording layer with the max. crystal grain width after initialization 0.01-0.1 .mu.m. The medium shows improved overwriting characteristics with less increase of jitter.

ST phase change optical recording disk initialization crystal grain width

IT Optical disks

Optical recording

(initialization of phase-change optical recording medium with improved overwriting characteristics)

IT 423172-09-2 423172-10-5 423172-11-6 423172-12-7 423172-13-8

423172-14-9

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(initialization of phase-change optical recording medium with improved overwriting characteristics)

L7 ANSWER 46 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:255925 CAPLUS

DN 136:301841

ED Entered STN: 05 Apr 2002

TI Phase-change rewritable optical recording media and method for manufacture thereof

IN Shinkai, Masaru; Deguchi, Hiroshi; Onagi, Nobuaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS G11B007-24; G11B007-0045; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002100076 | A2 | 20020405 | JP 2000-290866 | 20000925 |
| PRAI | JP 2000-290866 | | 20000925 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002100076 | ICM | G11B007-24 |
| | ICS | G11B007-24; G11B007-0045; G11B007-26 |
| | IPC | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-26 [ICS,7] |

AB The title recording media have a first dielec. layer, a recording layer, a second dielec. layer, and a reflective layer on a transparent substrate, wherein the second dielec. layer is made of materials suitable for recording at a desired linear velocity and functions as a layer for controlling the linear velocity of recording. Recording media provide the recording at the low linear velocity and shows the good durability. G 11 B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT BETWEEN RECORD CARRIER AND TRANSDUCER. 7/00 Recording or reproducing by optical means; Record carriers therefor [4]. 7/24 . Record carriers characterized by the selection of the material or by the structure or form [4].

ST phase rewritable optical recording media manuf

IT Optical disks

Optical recording materials

(phase-change rewritable optical recording media and method for manuf. thereof)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(dielec. layers of optical recording media)
IT 1314-13-2, Zinc oxide, uses 1344-28-1, Aluminum oxide, uses
12033-62-4, Tantalum nitride 12033-89-5, Silicon nitride, uses
24304-00-5, Aluminum nitride 59763-75-6, Tantalum oxide
RL: DEV (Device component use); USES (Uses)
(layer for controlling the linear velocity of recording of optical
recording media)
IT ***404003-64-1***
RL: DEV (Device component use); USES (Uses)
(recording layer of optical recording media)

L7 ANSWER 47 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:253096 CAPLUS
DN 136:286666
ED Entered STN: 05 Apr 2002
TI Optical disk with phase change type SbTe recording layer
IN Yamada, Katsuyuki; Narumi, Shinya; Harigaya, Makoto; Tani, Katsuhiko;
Iwata, Noriyuki; Onagi, Nobuaki; Ito, Kazunori; Shibaguchi, Takashi;
Hibino, Eiko; Yuzurihara, Hajime; Ohkura, Hiroko; Shimofuku, Akira;
Nakamura, Yuki
PA Ricoh Company, Japan
SO Eur. Pat. Appl., 56 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-00
ICS G11B007-007; G11B007-24; G11B007-26; G11B020-08
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | EP 1193696 | A2 | 20020403 | EP 2001-123474 | 20010928 |
| | EP 1193696 | A3 | 20030716 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | JP 2002225437 | A2 | 20020814 | JP 2001-38288 | 20010215 |
| | US 2002110063 | A1 | 20020815 | US 2001-966171 | 20010928 |
| | JP 2002358691 | A2 | 20021213 | JP 2001-304019 | 20010928 |
| | EP 1467351 | A1 | 20041013 | EP 2004-14398 | 20010928 |
| | R: DE, FR, GB | | | | |
| | EP 1467352 | A1 | 20041013 | EP 2004-14399 | 20010928 |
| | R: DE, FR, GB | | | | |
| PRAI | JP 2000-297364 | A | 20000928 | | |
| | JP 2000-310536 | A | 20001011 | | |
| | JP 2000-367361 | A | 20001201 | | |
| | JP 2001-88516 | A | 20010326 | | |
| | EP 2001-123474 | A3 | 20010928 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| EP 1193696 | ICM | G11B007-00 |
| | ICS | G11B007-007; G11B007-24; G11B007-26; G11B020-08 |
| | IPCI | G11B0007-00 [ICM,6]; G11B0007-007 [ICS,6]; G11B0007-24 [ICS,6]; G11B0007-26 [ICS,6]; G11B0020-08 [ICS,6] |
| | ECLA | G11B007/0045P; G11B007/005R; G11B007/006; G11B007/007; G11B007/125C; G11B007/24; G11B007/243; G11B007/26; G11B019/12; G11B020/08; G11B020/10 |
| JP 2002225437 | IPCI | B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7] |
| US 2002110063 | IPCI | G11B0007-00 |
| | IPCR | G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-006 [N,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0019-12 [I,A]; G11B0019-12 [I,C]; G11B0020-08 [I,A]; G11B0020-08 [I,C]; G11B0020-10 [I,A]; G11B0020-10 [I,C] |
| | NCL | 369/047.390 |
| | ECLA | G11B007/0045P; G11B007/24; G11B007/243; G11B019/12; |

JP 2002358691 IPCI G11B020/08; G11B020/10
 EP 1467351 IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-004
 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-26 [ICS,7]
 ECLA G11B007/243; G11B020/08
 EP 1467352 IPCI G11B0007-00 [ICM,7]; G11B0007-007 [ICS,7]; G11B0007-24
 [ICS,7]; G11B0007-26 [ICS,7]; G11B0020-08 [ICS,7]
 ECLA G11B007/243; G11B020/08
 AB An optical information recording medium comprises a substrate having
 concentric circular guide groove stores information that indicates a max.
 recording linear velocity V_h . A phase change type SbTe recording layer is
 formed on the substrate having such a compn. and thickness that a
 dislocation linear velocity V satisfies the relation $V \geq V_h \times 0.85$
 in particular for a pulse modulation recording method.
 ST optical disk phase change recording material antimony tellurium; telluride
 glass
 IT Sputtering
 (fabrication process of optical disk including)
 IT Optical disks
 (optical disks contg. telluride glass as phase change recording layer)
 IT Telluride glasses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (phase change recording layer in optical disk)
 IT Coating process
 (spin; fabrication process of optical disk including)
 IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-21-3, Silicon,
 uses 7440-31-5, Tin, uses 7440-69-9, Bismuth, uses 17778-88-0,
 Nitrogen atom, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (additive element in telluride glass used as phase change recording
 layer in optical disk)
 IT 81207-86-5 ***384829-31-6*** 406496-52-4 406496-53-5 406496-54-6
 406496-55-7 406496-56-8 406496-57-9 406496-58-0 406496-59-1
 406496-60-4 ***406496-61-5*** 406496-62-6 406496-63-7
 406496-66-0 406496-68-2 406496-69-3 406496-70-6 406496-71-7
 406496-72-8 406496-73-9 406496-74-0 406496-75-1 406496-76-2
 406496-77-3 ***406496-78-4*** ***406496-79-5***
 406496-80-8 406496-81-9 406496-82-0 406496-83-1
 406496-84-2 406496-85-3 406496-86-4 406496-87-5 406496-88-6
 406496-89-7 406496-90-0 406496-91-1 406496-92-2 406496-93-3
 406496-94-4 406496-95-5 406496-96-6 406496-97-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (phase change recording layer in optical disk)
 IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses
 7631-86-9, Silicon dioxide, uses 113443-18-8, Silicon monoxide
 RL: TEM (Technical or engineered material use); USES (Uses)
 (protection layer in optical disk contg.)
 IT 11106-92-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (reflection layer in optical disk contg.)
 IT 7440-22-4, Silver, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium,
 uses 7440-56-4, Germanium, uses 7440-74-6, Indium, uses 13494-80-9,
 Tellurium, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (telluride glass; phase change recording layer in optical disk contg.)

L7 ANSWER 48 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:238014 CAPLUS
 DN 136:286653
 ED Entered STN: 28 Mar 2002
 TI Phase-change optical information recording media with excellent
 overwritability and their manufacture
 IN Shinkai, Masaru; Konagi, Nobuaki
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B007-24
 ICS G11B007-24; G11B007-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

FA. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002092950 | A2 | 20020329 | JP 2000-277172 | 20000912 |
| PRAI | JP 2000-277172 | | 20000912 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|--|---------------|-------|---|
| | JP 2002092950 | ICM | G11B007-24 |
| | | ICS | G11B007-24; G11B007-26 |
| | | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |

AB The medium contains a transparent substrate, a 1st dielec. layer, a recording layer, a 2nd dielec. layer, and a reflection layer in this order, wherein at least one of the dielec. layers, facing the recording layer, comprises a dielec. material contg. a compd. free from Group IVA elements (except C) or a mixt. of the compd. and ZnS. The medium may be manufd. by sputtering the dielec. material as a target in the presence of a rare gas and optionally O gas.

ST optical information recording medium direct overwrite; rewritable optical disk metal oxide sputtering; titanium oxide dielec layer sputtering disk

IT Magnetron sputtering
Sputtering
(direct-current; manuf. of rewritable optical disks with good direct overwriting properties)

IT Erasable optical disks
(manuf. of rewritable optical disks with good direct overwriting properties)

IT Polycarbonates, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; manuf. of rewritable optical disks with good direct overwriting properties)

IT 405890-55-3P, Titanium zinc oxide sulfide (Ti0.2Zn0.8O0.4S0.8)
405890-57-5P, Niobium zinc oxide sulfide (Nb0.12Zn0.92O0.28S0.92)
405890-58-6P, Chromium zinc oxide sulfide (Cr0.4Zn0.8O0.6S0.8)
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dielec. layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 1308-38-9, Chromium oxide, uses 12627-00-8, Niobium oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(dielec. layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 178255-68-0P, Silicon zinc oxide sulfide (Si0.1Zn0.4O0.2S0.4)
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(recording layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT ***404003-64-1*** 405890-59-7
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 7440-22-4, Silver, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(reflection layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 7440-37-1, Argon, uses
RL: NUU (Other use, unclassified); USES (Uses)
(sputtering gas; manuf. of rewritable optical disks with good direct overwriting properties)

L7 ANSWER 49 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:193173 CAPLUS

DN 136:254597

ED Entered STN: 17 Mar 2002

TI Phase-change optical recording media enabling improvement of sputtering rate in film formation

IN Onagi, Nobuaki; Harigai, Masato; Ito, Kazunori; Tashiro, Hiroko; Yuzuhara, Hajime; Shinkai, Masaru; Deguchi, Hiroshi; Shibaguchi, Takashi; Suzuki, Eiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002074747 | A2 | 20020315 | JP 2000-265834 | 20000901 |
| PRAI | JP 2000-265834 | | 20000901 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|---|-------|--|
| | JP 2002074747 | ICM | G11B007-24 |
| | | ICS | G11B007-24 |
| | | IPCI | G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7] |
| AB | The media possess, between transparent substrates and phase-change recording layers, transparent dielec. protective layers composed of (i) lower layers having film-forming rate higher than that of ZnS-SiO ₂ and (ii) upper layers having thermal cond. equal to or lower than that of ZnS-SiO ₂ . Also claimed are the media bearing reflective heat radiation layers (A) adjacent to bilayer protective layers whose layers on the A side have thermal cond. higher than that of ZnS-SiO ₂ and A show thermal cond. higher than that of A1. The heat radiation layers may contain .gtoreq.50 at.% Ag. The media can be manufd. by high-speed sputtering while minimizing dust formation. | | |
| ST | phase change optical disk sputtering rate fast; dielec protective layer rewritable CD ROM; nitrided germanium alloy optical disk protective layer | | |
| IT | Erasable optical disks (CD-ROM; phase-change optical recording media bearing bilayered dielec. protective layers) | | |
| IT | Optical recording materials (erasable; phase-change optical recording media bearing bilayered dielec. protective layers) | | |
| IT | 7631-86-9, Silica, uses RL: TEM (Technical or engineered material use); USES (Uses) (protective layer components; phase-change optical recording media bearing bilayered dielec. protective layers) | | |
| IT | 409-21-2, Silicon carbide, uses 1309-48-4, Magnesia, uses 1314-13-2, Zinc oxide, uses 1314-36-9, Yttria, uses 1314-98-3, Zinc sulfide, uses 1315-09-9, Zinc selenide 1344-28-1, Alumina, uses 7440-57-5, Gold, uses 10043-11-5, Boron nitride, uses 11109-29-8 12033-62-4, Tantalum nitride 12069-32-8, Boron carbide (B4C) 24304-00-5, Aluminum nitride 157392-07-9, Silicon sulfur zinc oxide 212575-08-1D, nitrided 404003-60-7D, nitrided 404003-62-9D, nitrided 404003-63-0D, nitrided 404003-66-3D, nitrided 404003-67-4D, nitrided RL: TEM (Technical or engineered material use); USES (Uses) (protective layers; phase-change optical recording media bearing bilayered dielec. protective layers) | | |
| IT | 404003-61-8 ***404003-64-1*** ***404003-65-2*** RL: TEM (Technical or engineered material use); USES (Uses) (recording layers; phase-change optical recording media bearing bilayered dielec. protective layers) | | |
| IT | 37282-82-9 65264-68-8, Indium 3, silver 97 (atomic) RL: TEM (Technical or engineered material use); USES (Uses) (reflective heat radiation layers; phase-change optical recording media bearing bilayered dielec. protective layers) | | |

L7 ANSWER 50 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:19498 CAPLUS
DN 136:77302
ED Entered STN: 08 Jan 2002
TI Phase-change optical information recording media having antimony-tellurium alloy layers and their manufacture by vapor deposition and simultaneous crystallization
IN Miura, Hiroshi; Hanaoka, Katsushige; Onagi, Nobuaki; Harigaya, Masato; Deguchi, Hiroshi; Furukawa, Ryuichi; Otani, Wataru; Shibata, Kiyoto; Aman, Yasutomo
PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B41M005-26
 ICS G11B007-24; G11B007-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 75

| FAN.CNT 1 | | | | | |
|-----------|----------------|------|----------|-----------------|----------|
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI | JP 2002002116 | A2 | 20020108 | JP 2000-285730 | 20000920 |
| PRAI | JP 1999-266970 | A | 19990921 | | |
| | JP 2000-117774 | A | 20000419 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002002116 | ICM | B41M005-26 |
| | ICS | G11B007-24; G11B007-26 |
| | IPCI | B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |

AB The medium, useful for a rewritable optical disk, has a recording layer (A) which contains Sb, Te, and preferably Ge and has a metastable Sb3Te crystal phase (space group Fm3m) and a crystn.-accelerating layer (B) which contains Bi, Al, In, or Tl and contacts at least a part of the recording layer. B will melt by energy beam irradiation, disperse into A, and form amorphous recording marks with crystn. temp. .gtoreq.160.degree.. Enhanced reliability under high temp. and high humidity environments has been achieved.

ST optical information recording medium storage stability; antimony telluride metastable phase optical disk; bismuth crystn accelerating layer optical disk; rewritable optical disk initialization free

IT Crystal structure
 Crystallization
 Erasable optical disks
 Metastable state (thermodynamic)
 Optical recording materials
 (phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 1304-82-1, Bismuth telluride (Bi2Te3) 1312-41-0, Indium antimonide (InSb) 7429-90-5, Aluminum, processes 7440-28-0, Thallium, processes 7440-69-9, Bismuth, processes 12010-46-7, Bismuth, compd. with indium (1:1) 12323-19-2, Bismuth antimonide (BiSb)
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (crystn.-accelerating layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 7440-56-4, Germanium, processes 7440-57-5, Gold, processes
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (dopant, recording layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 7440-22-4, Silver, processes
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (dopant, recording layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 384829-16-7 384829-18-9 384829-19-0 ***384829-20-3***
 384829-22-5 384829-23-6 384829-24-7 384829-25-8
 384829-26-9 384829-27-0 384829-28-1 ***384829-29-2***
 384829-30-5 ***384829-31-6*** 384829-32-7 384829-33-8
 384829-35-0 ***384829-36-1*** 384829-37-2 384829-38-3
 384829-39-4 384829-40-7 384829-41-8 384829-43-0 384829-44-1
 384829-45-2, Antimony telluride (Sb3Te) 384829-46-3 384829-47-4
 384829-48-5 384829-49-6

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (recording layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb₃Te phase-contg. recording layers)
 IT 7440-74-6, Indium, processes
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (recording or crystn.-accelerating layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb₃Te phase-contg. recording layers)

L7 ANSWER 51 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2001:868000 CAPLUS
 DN 136:12935
 ED Entered STN: 30 Nov 2001
 TI Optical recording medium and sputtering target for fabricating the recording medium
 IN Nakamura, Yuki; Kato, Masaki
 PA Ricoh Company, Japan
 SO Eur. Pat. Appl., 16 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G11B007-24
 ICS C23C014-06
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 56
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|------------------|----------|
| PI | EP 1158506 | A1 | 20011128 | EP 2001-112746 | 20010525 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | US 6592958 | B2 | 20030715 | US 2001-863472 | 20010524 |
| | JP 2002046356 | A2 | 20020212 | JP 2001-156927 | 20010525 |
| | TW 514907 | B | 20021221 | TW 2001-90112689 | 20010525 |
| PRAI | JP 2000-155389 | A | 20000525 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| EP 1158506 | ICM | G11B007-24 |
| | ICS | C23C014-06 |
| | IPCI | G11B0007-24 [ICM,6]; C23C0014-06 [ICS,6] |
| | ECLA | C23C014/34B2; G11B007/243 |
| US 6592958 | IPCI | B32B0003-02 [ICM,7] |
| | IPCR | C23C0014-34 [I,A]; C23C0014-34 [I,C]; G11B0007-24 [I,C]; G11B0007-243 [I,A] |
| | NCL | 428/064.100; 419/035.000; 428/064.500; 428/064.600; 430/270.130 |
| | ECLA | C23C014/34B2; G11B007/243 |
| JP 2002046356 | IPCI | B41M0005-26 [ICM,7]; C23C0014-34 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7] |
| TW 514907 | IPCI | G11B0007-24 [ICM,7]; C23C0014-06 [ICS,7] |

AB An optical recording medium is provided with a recording layer made of a phase-change recording material including Ag, In, Sb, and Te as the main constituent elements, with the resp. at. percents of a, b, c, and d thereof being in the relationship of 0.1 .ltoreq. a .ltoreq. 5, 5 .ltoreq. b .ltoreq. 13, 62 .ltoreq. c .ltoreq. 73, 22 .ltoreq. d .ltoreq. 26, and a+b+c+d .gtoreq. 97. Alternatively, the recording material includes the constituent elements of Ag, In, Sb, Te, and Ge, with the resp. at. percents of a, b, c, d, and e thereof being in the relationship of 0.1 .ltoreq. a .ltoreq. 5, 5 .ltoreq. b .ltoreq. 13, 62 .ltoreq. c .ltoreq. 73, 22 .ltoreq. d .ltoreq. 26, 0.3 .ltoreq. e .ltoreq. 3, and a+c+d+e .gtoreq. 97. A sputtering target for forming the recording layer is also disclosed.
 ST phase change rewritable optical disk sputtering target; antimony gallium indium silver tellurium alloy
 IT Telluride glasses
 RL: DEV (Device component use); USES (Uses)

(antimony gallium indium silver telluride glass or antimony indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT Sputtering targets
(compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT Erasable optical disks
(optical recording medium and sputtering target for fabricating)

IT 7440-22-4, Silver, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium, uses 7440-74-6, Indium, uses 13494-80-9, Tellurium, uses
RL: DEV (Device component use); USES (Uses)
(antimony gallium indium silver telluride glass or antimony indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT 374728-65-1 ***374728-66-2*** ***374728-67-3***
RL: DEV (Device component use); USES (Uses)
(antimony gallium indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT 374728-59-3 374728-60-6 374728-61-7 374728-62-8 374728-63-9
374728-64-0 374728-68-4 374728-69-5 374728-70-8 374728-77-5
RL: DEV (Device component use); USES (Uses)
(antimony indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT 12780-80-2 12798-66-2 37263-88-0 51427-72-6 60291-59-0
60381-81-9 61691-68-7 74487-01-7 100788-99-6 116946-13-5
128160-58-7 133580-32-2 173384-70-8 180295-91-4 317855-01-9
374728-71-9 374728-72-0
RL: DEV (Device component use); USES (Uses)
(metal layer compn. for fabricating rewritable optical disks)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Ricoh Kk; EP 0717404 A 1996 CAPLUS
(2) Ricoh Kk; EP 0735158 A 1996
(3) Ricoh Kk; EP 0898272 A 1999 CAPLUS
(4) Sony Corp; EP 0962924 A 1999 CAPLUS
(5) Tdk Corp; EP 1030292 A 2000 CAPLUS

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(FILE 'HOME' ENTERED AT 17:06:35 ON 09 FEB 2006)

FILE 'REGISTRY' ENTERED AT 17:06:43 ON 09 FEB 2006

L1 12609 S AG 0.1-7/MAC
L2 6746 S IN 2-10/MAC
L3 2463 S SB 64-92/MAC
L4 1917 S TE 5-26/MAC
L5 3824 S GE 0.3-3/MAC
L6 70 S L1 AND L2 AND L3 AND L4 AND L5

FILE 'CAPLUS' ENTERED AT 17:08:15 ON 09 FEB 2006

L7 51 S L6

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|--|------------|---------|
| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| FULL ESTIMATED COST | 157.03 | 182.36 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | -38.25 | -38.25 |

STN INTERNATIONAL LOGOFF AT 17:09:00 ON 09 FEB 2006